

A Field Guide to the Sedges of the Cariboo Forest Region, British Columbia

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A field guide to the
Sedges of the Cariboo Forest Region,
British Columbia





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Sedges of the Cariboo Forest Region,
British Columbia**

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Province of British Columbia
Ministry of Forests



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The botanical descriptions have been abstracted from the manuals listed in the bibliography.



Fig. 1. Location of the Cariboo Forest Region within British Columbia.

INTRODUCTION

Sedges are grass-like plants that belong to the genus *Carex* in the family Cyperaceae. In the Cariboo Forest Region many different species occur and in a wide variety of habitats. Although predominantly associated with the numerous wetlands that occur throughout the region, many sedges are also found in the forest, in the grassland, and in the alpine.

Sedges are an important source of forage for both livestock and wildlife. The large water sedges form a major part of the "swamp hay" harvested from the wetlands. These sedges contain more protein, fats, and carbohydrates, and less crude fibre than grasses resulting in a nutritious but light-weight hay. Some species, particularly in the grasslands, are good indicators of range condition. Sedges often play a part in protecting soils from erosion, and in wetland areas help to build peat soils.

As pressures for increased resource utilization continue a sound basis for intensive management of the land becomes increasingly important. The Ministry of Forests has developed an ecological classification system in order to provide resource managers with a constant framework to aid their interpretive needs. This system requires the botanical identification of characteristic plant species from many different habitats. The sedges are a complex and difficult group to identify. Although a number of standard references describe a large number of species, no one illustrated text deals with all the species occurring in the Cariboo Forest Region. The purpose of this booklet, therefore, is to provide resource managers with an easy to use field guide to the identification of sedges in the Cariboo Region.

Scope

This Field Guide is designed to aid in the identification of sedges by: (1) dividing the sedges of the region into five groups according to the principal environment in which they occur; (2) keying separately the common species within each group; (3) describing the features of each sedge in such a way that it can be easily distinguished from others in the same group; and (4) providing life-like illustrations of the plants. The grouping of sedges into five groups according to environment is based on several years experience in observing and collecting plants during field work for the Cariboo Range Section.

There are approximately 150 species of the genus *Carex* in British Columbia. Eighty-four of these species are known to occur in the Cariboo Forest Region (see Figure 1) and are included in this Field Guide.

The 56 most common sedges have been illustrated. These illustrations are all original drawings by Shirley Salkeld, Cariboo Research Section, using specimens from the Cariboo Regional Herbarium. Emphasis has been placed on large pen-and-ink drawings, showing full views of the plants as well as details of diagnostic features. Within each of the five groups, the illustrations are organized by visual similarity for a quick comparison between species of similar appearance. Brief descriptive notes are given for each plant emphasizing those features particularly useful for field identification.

Nomenclature

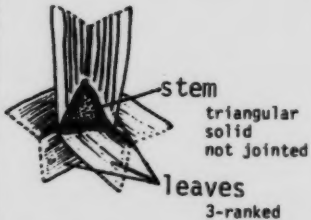
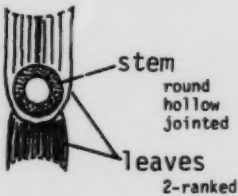
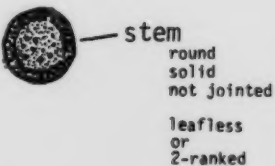
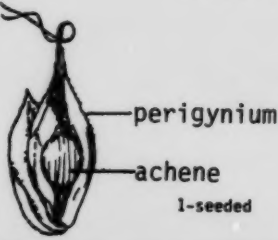
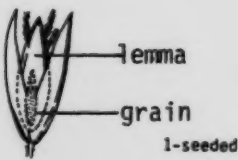
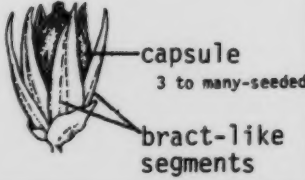
The nomenclature used follows that of Taylor and MacBryde (1977), with five exceptions. In each of these five cases the name used by Taylor and MacBryde is listed as a synonym. Three species, *Carex prairea* and *C. simulata*, both common in this region, and *C. tenera*, an uncommon species, are new to the list of vascular plants in B.C. (Taylor and MacBryde, 1977). Common names are not used because they vary from place to place. There are voucher specimens in the Cariboo Regional Herbarium (WLK)¹ for all *Carex* species listed here, with the exception of *Carex sprengelii*. A collection of this species, from this region, is in the herbarium of the British Columbia Provincial Museum, Victoria (V)¹.

How to Tell Sedges From Other Grass-Like Plants

Plants within the Cyperaceae family (sedges, spikerushes, cottongrass, kobresia, bulrushes and clubrushes), the Poaceae family (grasses), and the Juncaceae family (rushes and woodrushes) all have a "grass-like" appearance and may be confused with each other.

The distinguishing feature of a sedge is that each female flower is enclosed in a sac, called the perigynium. (*Peri* means "around" and *gyn* refers to female reproductive parts). Sometimes this sac is inflated and easy to see; sometimes it is thin and closely bound to the flower. Each perigynium contains one achene (fruit) and is solitary in the axil of a single scale. (Perigynia and other features of sedges are illustrated in the glossary on pages 84-85). Other genera within the Cyperaceae family have fruit as a bare achene with no perigynium, or with an open perigynium as in *Kobresia*. *Kobresia myosuroides*, found in the alpine and in shrub-carrs at lower elevations, is frequently mistaken for a sedge but can be distinguished by the presence of the bare achene.

The following table points out a few characteristics which can be used to distinguish sedges from plants belonging to the Poaceae and Juncaceae families.

	SEDGES	GRASSES	RUSHES, WOODRUSHES
Simplified cross-sectional diagram of stem, leaves	 stem triangular solid not jointed leaves 3-ranked	 stem round hollow jointed leaves 2-ranked	 stem round solid not jointed leafless or 2-ranked
Flower Fruit	 perigynium achene 1-seeded	 lemma grain 1-seeded	 capsule 3 to many-seeded bract-like segments

1. Acronym listed in Index Herbariorum.

How To Use This Field Guide

To identify a sedge, first note the broad environmental category (grassland, dry forest, wet forest, wetlands, subalpine-alpine) in which the plant is growing. Then turn to the corresponding section in the guide, and use the key to species found in that section. To use the keys a plant with well-developed fruits (perigynia) is usually needed. Determine the location of the remnants of the male flowers, usually withered filaments. Observe the type of root system to see whether a rhizome is present.

The keys are constructed using paired statements containing contrasting characteristics. If the plant's characteristics do not agree with statement 'a' then they will fit statement 'b'; proceed then to the next pair of statements under the correct alternative. This process is followed until a name is reached. Verify the species identification comparing the plant with the illustration and the descriptive notes beside it. If the description obviously does not fit, it may be an uncommon sedge which is not in the key, or one outside its normal habitat. In this case reference should be made to the standard manuals listed in the bibliography.

Technical terms have been kept to a minimum; however, the use of some botanical terminology is unavoidable. An illustrated glossary plus a glossary of terms have been provided to help clarify the meaning of terms particular to sedges.

Limitations

There are certain pitfalls in organizing plants according to broad environmental category. Although most sedges are quite specific and predictable in their distribution, it must be remembered that the environmental categories used here are general trends and are not absolute. Occasionally a plant will be encountered outside the environmental category in which it is treated here. Species which are known to occur regularly in more than one of the five environments are listed more than once.

It is important to note that the keys in this field guide are designed for use in the Cariboo Forest Region only. They may be misleading if used to identify sedges from other regions. To simplify the task of identifying sedges, uncommon species are not included in the keys, but are listed separately.

Investigations on sedges of the Cariboo Region is continuing over the next few years. As new knowledge is gained, and this guide is field tested, revisions will likely be made.

Anna Roberts
Range Section
Cariboo Forest Region



Grassland Sedges



Section 1



GRASSLAND SEDCES

Grasslands:

Dry non-forested areas of the Interior Douglas-fir (IDF) and Ponderosa Pine - Bunchgrass (PPBG) biogeoclimatic zones, characterized by Chernozemic soils and plant communities dominated by grasses and low forbs.



General location where grasslands dominate in the Cariboo Forest Region.

General location where grasslands are sporadic in the Cariboo Forest Region.

Common Species:

Carex eleocharis Bailey (syn. *C. stenophylla* Wahl.)
C. obtusata Lilj.
C. petasata Dewey
C. praegracilis Boott
C. praticola Rydb.

Rarely Encountered Species:

C. douglasii Boott

Key:

- 1a. plants less than 20 cm high, rhizomatous; perigynia inflated
 - 2a. spike solitary, with well developed terminal male portion*C. obtusata* p. 8
 - 2b. spikes 4-8, densely aggregated into a solitary head, each spike with male portion above female.....*C. eleocharis* p. 9
- 1b. plants more than 20 cm high; perigynia wing-margined
 - 3a. plants densely tufted; spikes with male portion below female
 - 4a. perigynia large 5.8-8 mm; spikes more or less aggregated into an erect head.....*C. petasata* p. 10
 - 4b. perigynia smaller, 4.5-5.7 mm; head relatively loose and flexuous, the lowest internodes each 5-10 mm...*C. praticola* p. 11
 - 3b. plants appearing serially from widely creeping stout black rhizomes; spikes with male portion above female or plant dioecious.....*C. praegracilis* p. 51



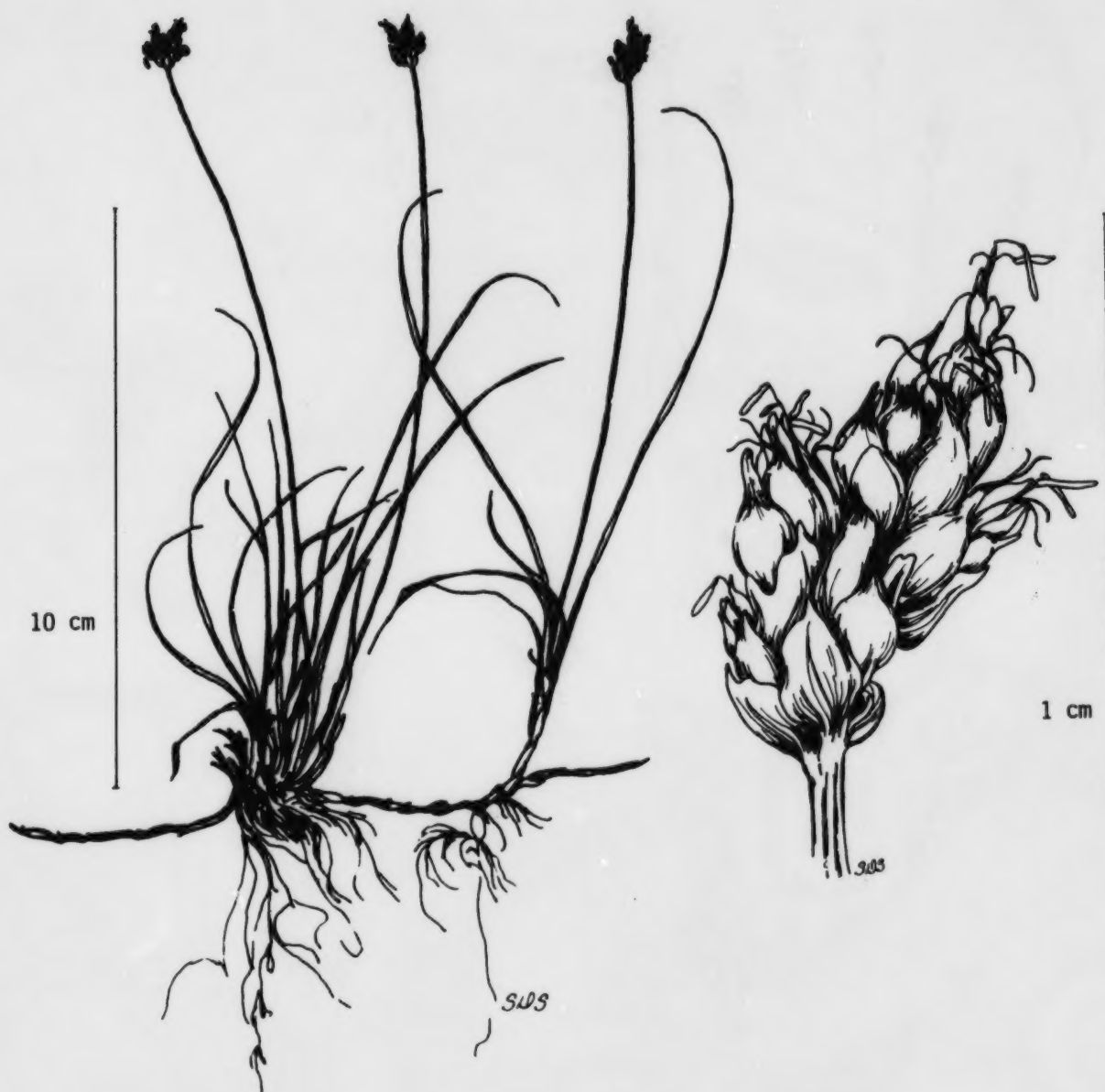
Carex obtusata

plant - very small, 10-15 cm tall; usually single plants at semi-regular intervals along a slender dark rhizome

spike - one spike per stem with well developed male portion at the top, shorter female portion below

perigynia - few, generally 1-9, plump, dark and glossy when ripe, 3-3.5 mm long

comments - a common small sedge of the dry grassland. *C. obtusata* matures early in June. Although palatable to livestock, it has the ability to increase on over-grazed rangeland. The single spike with dark perigynia distinguishes this species from *C. eleocharis*.



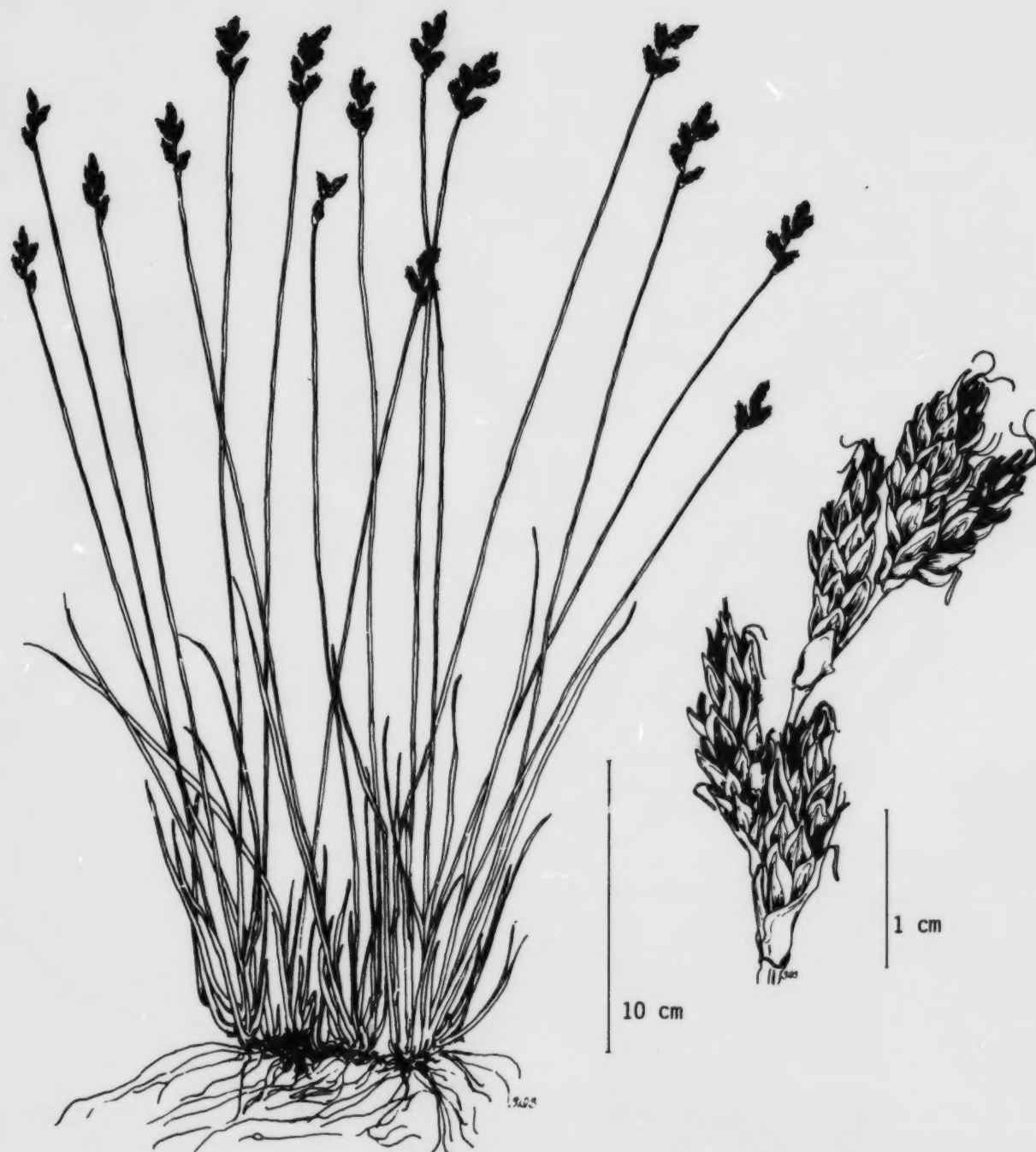
Carex eleocharis

plant - very small, 3-15 cm tall; in tufts from long slender rhizomes

spikes - 4-8 spikes densely aggregated into a solitary head; each spike with male portion above and female portion below

perigynia - brownish, 2.6-3.3 mm, projecting beyond the scale when ripe

comments - a fairly common small sedge of the dry grassland. It flowers early in the spring, has the tendency to grow in large mats, and increases in heavily utilized areas. Can be confused with *C. obtusata*.



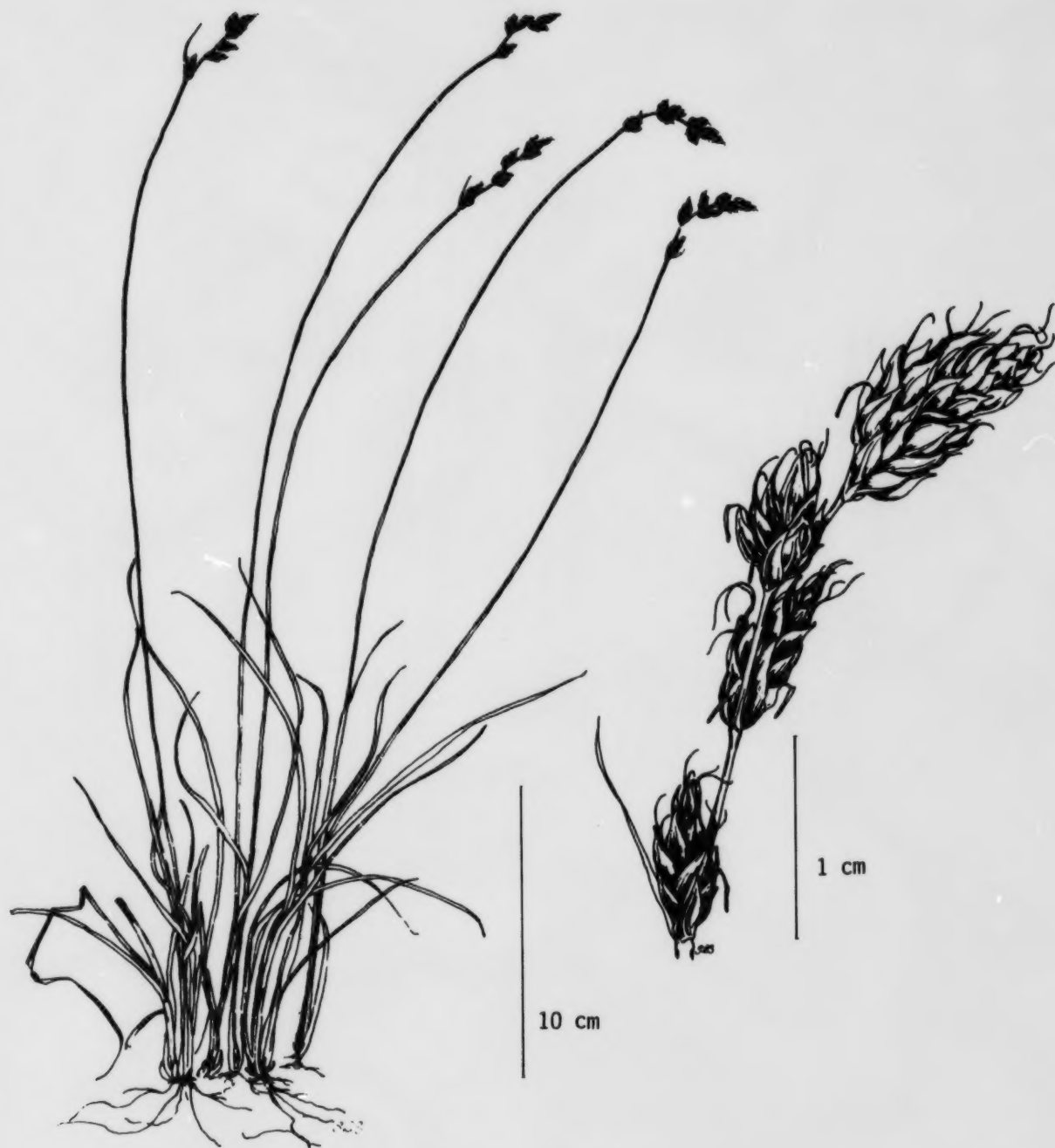
Carex petasata

plant - densely tufted, 40-70 cm tall; stems stiffly erect

spikes - 3-6 overlapping spikes, male portion at the base of each

perigynia - large, flattened, wing-margined, 5.8-8 mm long

comments - this is the common large sedge of the grassland, never dominant, but an indicator of good range condition as it is not resistant to heavy grazing. Can be confused with *C. praticola*.



Carex praticola

plant - densely tufted, 30-80 cm tall; inflorescence tending to be somewhat nodding

spikes - 4-7 spikes, the two lowest internodes each 3-10 mm

perigynia - flattened, wing-margined, 4.5-5.7 mm long

comments - a widespread sedge, found in slightly moister habitats than *C. petasata*, at the edge of the grassland and occasionally in the forest.



Dry Forest Sedges



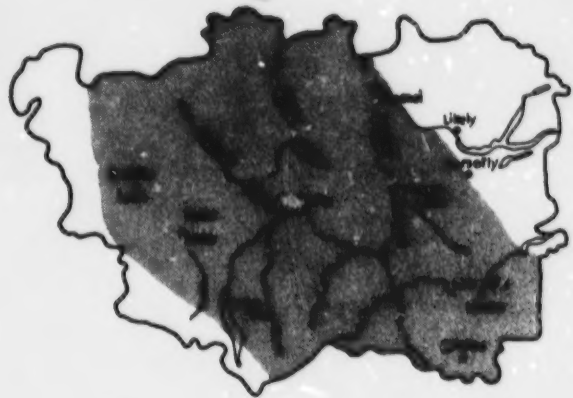
Section 2



DRY FOREST SEDGES

Dry Forests:

Forested areas characterized by the presence of pinegrass (*Calamagrostis rubescens*) growing under Douglas-fir or lodgepole pine, and receiving less than 64 cm of annual precipitation. These forests occur predominantly in the Interior Douglas-fir (IDF) biogeoclimatic zone and the dry subzones of the Sub-Boreal Spruce (SBS). The soils are characteristically Luvisols and Brunisols. Such habitats will also occur on drier, excessively drained sites in other zones.



General location of dry forest in the Cariboo Forest Region.

Common Species:

Carex concinna R.Br.
C. concinnoides Mack.
C. peckii Howe
C. praticola Rydb.
C. richardsonii R. Br.
C. rossii Boott
C. siccata Dewey (= *C. foenea* Willd.)

Rarely Encountered Species:

Carex deflexa Horn.
C. saximontana Mack.
C. sprengelii Dewey

Key:

- 1a. perigynia pubescent, not wing-margined
 - 2a. some spikes arising from base of stems, widely separated from the terminal spikes.....*C. rossii* p. 18
 - 2b. spikes all borne close together toward the end of flowering stems much exceeding the leaves, none basal
 - 3a. bract subtending lowest spike shorter than spike; perigynia beakless or with beak less than 0.5 mm
 - 4a. male spike small, 3-6 mm long; leaves 1-3 mm wide.....*C. concinna* p. 17
 - 4b. male spike larger, 8-20 mm long; leaves 2-5 mm wide
 - 5a. male spike noticeably stalked; stems strongly roughened; stigmas 3.....*C. richardsonii* p. 20
 - 5b. male spike sessile; stems smooth or nearly so; stigmas usually 4.....*C. concinnoides* p. 21
 - 3b. bract subtending lowest spike longer than lower spike, foliaceous; perigynia with bidentate beak 0.5 mm or more long
 -*C. peckii* p. 19
- 1b. perigynia glabrous, wing-margined
 - 6a. stems singly from slender brown creeping rhizome.....*C. siccata* p. 16
 - 6b. stems several in a dense tuft without rhizome.....*C. praticola* p. 11



plant - stem slender, 15-50 cm tall, arising singly from slender, brown, scaly rhizome

leaves - several, shorter than stem

spikes - relatively few, sessile in a linear-oblong head

perigynia - glabrous, about 5 mm long including the prominent long beak;
conspicuously longer than the scales

comments - a common species in areas of sandy soil in the open dry forest. The long soft leaves could easily be mistaken for pinegrass (*Calamagrostis rubescens*).



Carex concinna

plant - small, tufted, with rhizomes

leaves - narrow, lax, more or less recurving; usually shorter than the stem

spikes - terminal male spike small, 3-6 mm; female spikes 2 or 3

perigynia - pubescent, plump, 2.5-3 mm long, twice as long as the broad scales

comments - *C. concinna* is a species of moist, shady, dry climate forests, such as those composed of *Picea glauca* and *Betula papyrifera*. Also occurs in shrub-carrs with *Betula glandulosa*.



Carex rossii

plant - low; dense tufts

leaves - elongate, rather lax and often surpassing the stem

spikes - bracts of non-basal female spikes well developed, leaflike, usually longer than the inflorescence; some spikes form near the base of plant, widely separated from terminal spikes; male spikes 4-10 mm.

perigynia - pubescent, 3-4.5 mm long; beak 0.8-1.5 mm

comments - a widespread sedge of dry or well drained open forest; often found in clearings or encroaching into the grassland at the edge of the forest. Also found on dry sites in the subalpine.

similar species - *C. deflexa* can be distinguished from *C. rossii* by the small spike (2-5 mm), small perigynia (2-2.5 mm) and shorter beak (0.5 mm) of *C. deflexa*.

C. saximontana can be distinguished by the enlarged leaflike lower bracts which conceal the spikes and by the glabrous perigynia.



Carex peckii

plant - loosely tufted from short ascending rhizome; stems reddish purple at base,
longer than the soft, pale leaves

spikes - 3 to 4, the terminal one male; foliaceous bract often longer than the
inflorescence

perigynia - pubescent, elliptic, much longer than wide

comments - found in open forest, particularly shrubby places; can be confused with
C. concinna and *C. rossii*.



Carex richardsonii

plant - loosely tufted from creeping, scaly rhizome

leaves - clustered near the base, up to 5 mm wide, lax and usually shorter than the stem

spikes - male spike terminal, noticeably stalked; female spike 10-25 flowered; stems strongly roughened

perigynia - pubescent, plump, narrower and shorter than the scales; stigmas three

comments - this is the common sedge of the lodgepole pine and Douglas-fir forest. It is more noticeable in the spring when the stems are erect and the flowering male spike is yellow. Later in the season the stems lie horizontally on the ground. This species can be confused with *C. concinnoides* but is separated by the stalked male spike and the scabrous stem.



Carex concinnoides

plant - loosely tufted from creeping, scaly rhizome

leaves - clustered near the base, up to 5 mm wide, lax and usually shorter than the stem

spikes - male spike terminal, conspicuous and sessile; female spike 5-10 flowered;
stems smooth or nearly so

perigynia - pubescent, plump, wider and longer than the scales; stigmas four

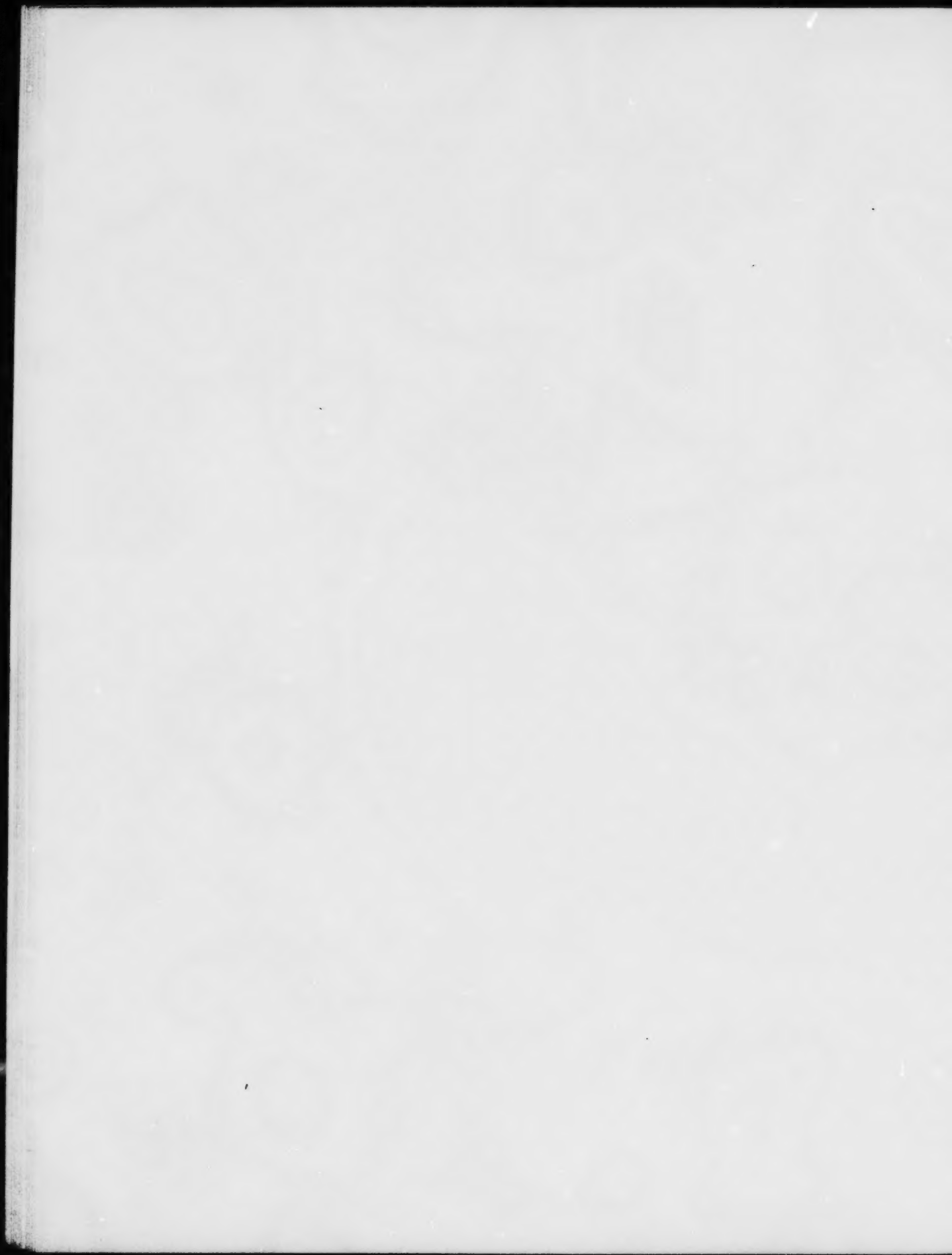
comments - like *C. richardsonii*, this sedge occurs in the lodgepole pine and Douglas-fir forest but is not as common. It can also be found on dry alpine slopes up to 2100 metres.

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Wet Forest Sedges



Section 3



WET FOREST SEDGES

Wet Forests:

Forested areas which receive an annual precipitation in excess of 64 cm, in the Interior Cedar Hemlock (ICH) biogeoclimatic zone and in the wetter Sub-Boreal Spruce (SBS) subzones. These sedges occur primarily on wetter sites within these forests. Similar habitats may be found in other forested zones where there is excess moisture due, for example, to seepage.



General location of wet forest in the Cariboo Forest Region.

Common Species:

Carex aenea Fern
C. brunnescens (Pers.) Poir.
C. capillaris L.
C. deweyana Schw.
C. disperma Dewey
C. leptalea Wahl.
C. mertensii Prescott
C. norvegica Retz. (= *C. media* R.Br.)
C. pachystachya Cham.

Less Common Species:

Carex laeviculmis Mein.
C. loliacea L.
C. microptera Mack.
C. peckii Howe
C. trisperma Dewey

Key:

- 1a. spikes all sessile
 - 2a. spikes closely packed, or solitary
 - 3a. spike solitary.....*C. leptalea* p. 30
 - 3b. spikes more than one
 - 4a. scales black, perigynia not wing-margined...*C. norvegica* p. 27
 - 4b. scales brown, perigynia wing-margined....*C. pachystachya* p. 56
 - 2b. spikes well separated
 - 5a. leaves wide, 2-5 mm
 - 6a. spikes large, 5-7 mm wide; large flexuous head..*C. aenea* p. 33
 - 6b. spikes smaller, 4-5 mm wide, head not flexuous
*C. deweyana* p. 32
 - 5b. leaves narrow, 1-2.5 mm
 - 7a. perigynia pubescent.....*C. peckii* p. 19
 - 7b. perigynia smooth
 - 8a. spikes very small, each with 1-4 perigynia; male
 flowers above female on same spike..... *C. disperma* p. 29
 - 8b. spikes small, each with 5-10 perigynia; male
 flowers below female on same spike...*C. brunnescens* p. 31
 - 1b. spikes nodding on filiform peduncles
 - 9a. 6-10 spikes; terminal spike nodding, 1.5-4 cm long....*C. mertensii* p. 73
 - 9b. 2-5 spikes; terminal spike erect, 0.4-1 cm long.....*C. capillaris* p. 26



Carex capillaris

plant - slender, densely tufted,
10-60 cm tall

spikes - lateral spikes at ends
of nodding filiform peduncles;
terminal spike male

perigynia - elliptic in outline,
glistening bronze when ripe

comments - a fairly common sedge
of moist open forests and
shrub-carr. *C. sprengelii*
may key out here but is
distinctive having a much
larger perigynium (4-7 mm)
with a long slender beak.



Carex norvegica

plant - tufted from a short
rhizome; 20-70 cm tall

spikes - 3-4 erect spikes
closely packed at the tip of
the stem; scales black

perigynia - elliptic in outline,
green when young, bronze when
ripe, 1.9-3.0 mm long

comments - frequent in moist,
partially open habitats up to
2100m in elevation. Can be
confused with *C. atrovagana*
which has larger spikes
(terminal spike greater than
10 mm long) and perigynia
greater than 3 mm.





Carex disperma

Carex disperma

plant - loose tufts of slender stems and leaves

spikes - spikes very small and few-flowered, well separated from each other; terminal spike with male flowers at the top

perigynia - erect or at an angle less than 90° to the main axis; 9 or fewer thin nerves on each surface

comments - this is a very common sedge of wet forests. Can be confused with *C. loliacea* which has a terminal spike with staminate flowers at the base; perigynia spread at an angle of 90° ; and 9 or more stout nerves on each perigynium surface. *C. trisperma* also has few-flowered distant spikes; however the long bract (2-6 cm) of the lowest spike will distinguish this species.



Carex loliacea



Carex leptalea

plant - very slender from thread-like
creeping rhizome; 10-40 cm tall; leaves,
stem and rhizomes never exceeding 1 mm
in width

spike - solitary, 0.5-1.5 cm long

perigynia - distinctive with rounded apex,
green

comments - this inconspicuous sedge is wide-
spread in mossy forests and shrubby fens.



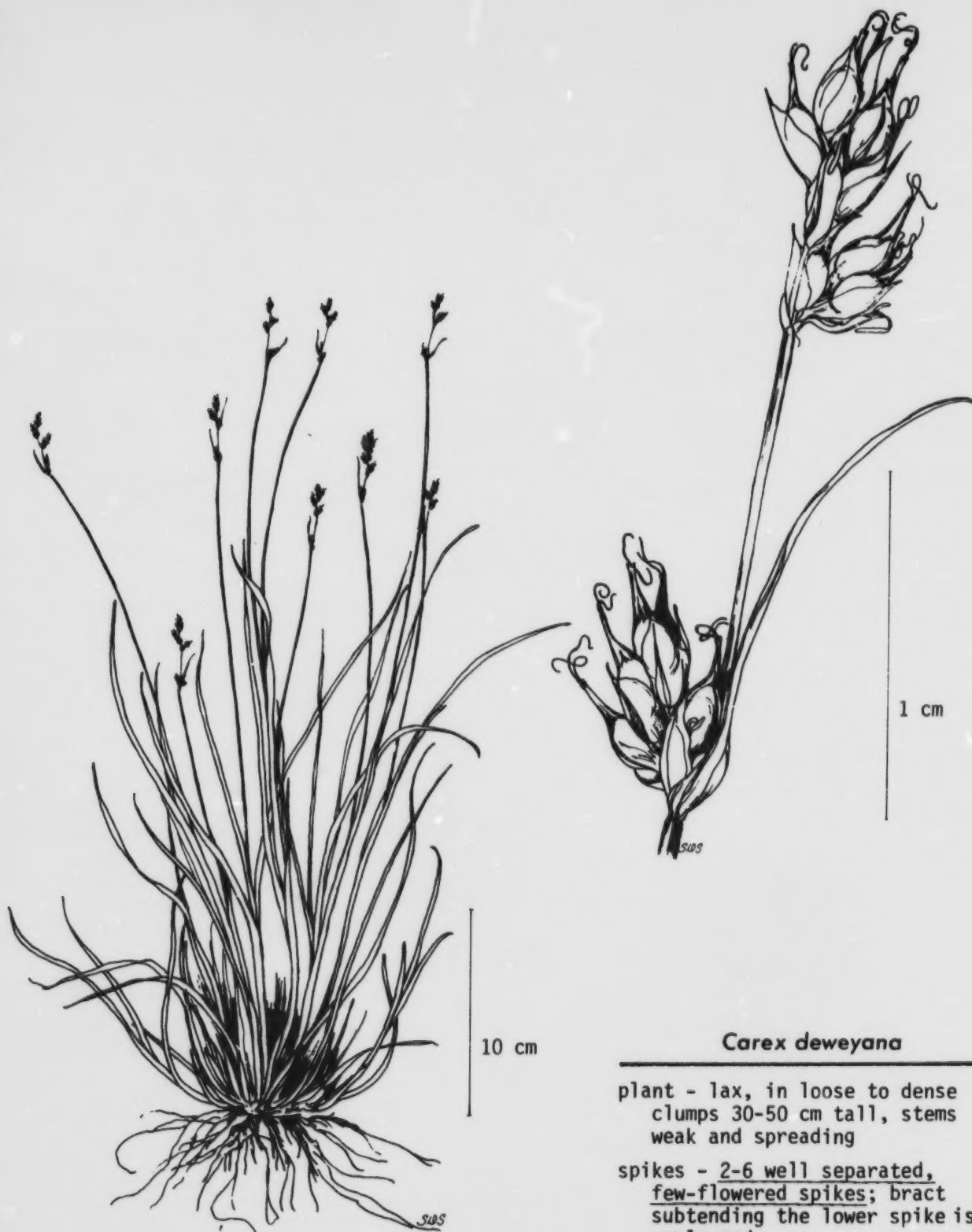
Carex brunnescens

plant - densely clustered, fine stems exceeding the leaves

spikes - 3-5 small, few-flowered spikes, the lower strongly separated; male flowers below female on same spike

perigynia - small, 2-2.5 mm, loosely spreading at maturity; beak obvious, giving a saw-edge margin appearance to the spike

comments - occasional in moist forest. Two subspecies occur: ssp. *pacifica* with weak, curved stems 30-60 cm tall; ssp. *alaskana* with stiff, erect stems 20-40 cm tall. *C. brunnescens* can be confused with a sedge of the open wetlands, *C. canescens*, which has larger, more numerous-flowered spikes that appear smooth in outline. A less common moist forest species, *C. laeviculmis*, is similar, but has a larger perigynium (2.5-3.0 mm) with a longer beak (0.5-1.0 mm), and a more remote lower spike. Another uncommon species, *C. trisperma*, would key out here. It has larger perigynium (3.0-4.0 mm), fewer spikes (2-3), and the axis of the inflorescence is often elbowed at the lower spikes.



Carex deweyana

plant - lax, in loose to dense clumps 30-50 cm tall, stems weak and spreading

spikes - 2-6 well separated, few-flowered spikes; bract subtending the lower spike is prolonged

perigynia - lance-elliptic, tapering to a prominent beak

comments - a sedge of the shady moist forest.



Carex aenea

plant - large, tufted, up to
80 cm tall

spikes - 4-8 in a loose flexuous
head, the lower spikes well
separated

perigynia - brown, ovate and
wing-margined

comments - often found in dis-
turbed areas at the edge of
the forest. Can be confused
with *C. praticola*.



Wetland Sedges



Section 4

WETLAND SEDGES

Wetlands:

Open areas below the subalpine zone with soils that are permanently or periodically saturated.

Common Species:

Carex aquatilis Wahl.
C. atherodes Spreng.
C. athrostachya Olney
C. aurea Nutt.
C. buxbaumii Wahl.
C. canescens L.
C. capillaris L.
C. chordorrhiza Ehrh.
C. cusickii Mack.
C. diandra Schrank
C. dioica L. ssp. *gynocrates* (Wormsk.) Hult.
C. disperma Dewey
C. exsiccata Bailey (= *C. vesicaria* L.)
C. interior Bailey
C. lanuginosa Michx.
C. lasiocarpa Ehrh.
C. leptalea Wahl.
C. limosa L.
C. microptera Mack.
C. norvegica Retz. (= *C. media* R.Br.)
C. parryana Dewey
C. pauciflora Lightf.
C. paupercula Michx.
C. praegracilis Boott
C. prairea Dewey
C. rostrata Stokes
C. sartwellii Dewey
C. simulata Mack.
C. sitchensis Prescott
C. tenuiflora Wahl.
C. viridula Michx. (= *C. oederi* Retz. ssp. *viridula* (Michx.) Hult.)

Less Common Species:

Carex angustior Mack.
C. arcta Boott
C. bebbii (Bailey) Fern.
C. crawfordii Fern.
C. flava L.
C. garberi Fern.
C. heleonastes Ehrh.
C. hystericina Muhl.
C. lenticularis Michx.
C. leporina L.
C. macloviana D'Urv.
C. microglochin Wahl.
C. retrorsa Schw.
C. stipata Muhl.
C. sychmocephala Carey
C. tenera Dewey

WETLAND SEDGES

Key:

- 1a. large water sedges; stems stout; leaves wide, septate - nodulose;
inflorescence elongate, with long leafy bract; 7 species..... p. 40-45
- 1b. plants not as above
 - 2a. spikes more than one
 - 3a. perigynia pubescent; tall slender plants with rhizomes
 - 4a. leaves rolled, less than 2 mm wide.....*C. lasiocarpa* p. 46
 - 4b. leaves flat, 2-5 mm wide.....*C. lanuginosa* p. 47
 - 3b. perigynia glabrous; plants various
 - 5a. spikes with long peduncles; terminal spike male
 - 6a. female spikes nodding on filiform peduncles
 - 7a. roots covered with yellowish wooly hairs
 - 8a. terminal male spike long, 15-27 mm
.....*C. limosa* p. 48
 - 8b. terminal male spike short, 4-12 mm
.....*C. paupercula* p. 49
 - 7b. roots without yellowish hair cover; male spike
4-10 mm.....*C. capillaris* p. 26
 - 6b. female spikes erect; lowest bract long;
perigynia beakless.....*C. aurea* p. 61
 - 5b. spikes all sessile or with very short peduncles
 - 9a. spikes all alike
 - 10a. spikes closely aggregated
 - 11a. male flowers above female or plants dioecious
 - 12a. plants with creeping rhizome
 - 13a. leaves clustered near base
 - 14a. perigynia small, 1.7-2.5 mm,
beak less than 0.5 mm.....*C. simulata* p. 50
 - 14b. perigynia larger, 2.6-4.6 mm,
beak 0.6-1.3 mm.....*C. praegracilis* p. 51
 - 13b. leaves not forming basal cluster
 - 15a. tall coarse plant, 50-80 cm
.....*C. sartwellii* p. 52
 - 15b. plant 10-30 cm; horizontal
stem just under moss
surface.....*C. chordorrhiza* p. 59
 - 12b. plants densely tufted, with short rhizome
 - 16a. leaves narrow, less than 3 mm wide
 - 17a. sheath not copper-tinged at mouth
.....*C. diandra* p. 54
 - 17b. sheath copper-tinged at mouth,
convex and prolonged.....*C. prairea* p. 55

- 16b. leaves wider, 3-5 mm; sheath
copper-tinged at mouth, only moderately
prolonged.....*C. cusickii* p. 55
- 11b. male flowers below female
 - 18a. plants densely tufted; perigynia longer
than 3 mm, beak long
 - 19a. lower bract of inflorescence elongate;
perigynia narrow, thin-edged
.....*C. athrostachya* p. 57
 - 19b. bracts all short
 - 20a. spikes crowded into a cone-shaped
head; perigynia thin-edged
.....*C. microptera* p. 56
 - 20b. spikes distinct; perigynia widely
spreading at maturity.....*C. interior* p. 62
 - 18b. plants with short or filiform rhizome;
perigynia less than 3 mm, beak very short
or none
 - 21a. 3 small spikes, less than 4 mm, closely
bunched at tip of stem, scales light
.....*C. tenuiflora* p. 60
 - 21b. 3-5 erect spikes, 6-10 mm long, at tip of
stem; scales dark.....*C. norvegica* p. 27
- 10b. spikes not closely aggregated; lower spikes
separated
 - 22a. spikes very small, less than 5 mm, few
flowered.....*C. disperma* p. 29
 - 22b. spikes 5-10 mm, with 15-30 flowers
.....*C. canescens* p. 58
- 9b. terminal spike differing from the others, mostly
male
 - 23a. bract subtending lowest spike relatively short,
spikes stiffly erect.....*C. parryana* p. 53
 - 23b. bract subtending lowest spike equalling or
longer than inflorescence
 - 24a. perigynia with conspicuous beak; scales
shorter than perigynia.....*C. viridula* p. 62
 - 24b. perigynia beakless; scales awn-tipped,
longer than perigynia.....*C. buzbaumi* p. 63
- 2b. spike solitary
 - 25a. perigynia not spreading, rounded apex without beak
.....*C. leptalea* p. 30
 - 25b. perigynia spreading; beak distinct
 - 26a. female scales deciduous; perigynia narrow, 6-7 mm
.....*C. pauciflora* p. 64
 - 26b. female scales persistent; perigynia ovate 3-3.5 mm
.....*C. dioica* p. 65

LARGE WATER SEDGES

There are five common species of large water sedges in this region that have the same general appearance. All have stout stems, wide leaves which are septate-nodulose, and an elongate inflorescence with cylindrical spikes. The leafy bract below the lowest spike is equal to or longer than the inflorescence. They often grow in solid stands in shallow water or very wet soil, forming a dense sod. These sedges are a common component of wetland hay; and are valued as food for waterfowl.

Characteristics which can be used to distinguish between these five species of large water sedges are described then illustrated on the following pages.

C. retrorsa and *C. hystericina*, two other species of large water sedges, occur infrequently in wet areas near lakes and streams. The distinctive features of *C. retrorsa* are the long leafy bract that is more than twice as long as the whole inflorescence, and the large reflexed perigynia (7-10 mm long). *C. hystericina* has female spikes that are nodding on slender peduncles, and perigynia (5-7 mm long) that are prominently 15-20 nerved.



LARGE WATER SEDGES

1. *Carex rostrata*

plant - in clumps from stout, long, scaly rhizomes

leaves - glabrous; sheaths brown

perigynia - inflated, abruptly contracted to a beak with short teeth, strongly spreading at maturity

comments - a very common sedge, found in mixed and pure stands.

2. *Carex atherodes*

plant - clumps from stout, long, scaly rhizomes

leaves - pubescent, the short hairs visible to the unaided eye; sheath breaking, becoming filamentose

perigynia - inflated, narrowing very gradually to the base of long teeth

comments - widespread, often forming pure stands, particularly in wetlands which normally dry up in summer.

3. *Carex aquatilis*

plant - clumps from stout, long, scaly rhizomes

leaves - glabrous, glaucous green; sheath red

spikes - erect, all nearly sessile

perigynia - flattened, ovate

comments - a very common sedge, found in pure and mixed stands, often with *C. rostrata*. Early in the season, the glaucous green of *C. aquatilis* and the yellow-green of *C. rostrata* help to distinguish these species in vegetative form.

4. *Carex sitchensis*

plant - densely clustered, with short rhizomes or none

leaves - glabrous, sheath red

spikes - lower spikes nodding on peduncles greater than 3 cm long

perigynia - similar to those of *C. aquatilis*; scales narrow, acute

comments - occasionally found scattered among *C. aquatilis*; occurring in pure stands at higher elevations.

5. *Carex exsiccata*

plant - short rhizomes or none

leaves - glabrous; sheath breaking, becoming filamentose

perigynia - many-ribbed, gradually tapering to a long beak; reddish-tinged and not spreading at maturity

comments - less common; forms pure stands, particularly in wetlands that dry up in summer.

10 cm

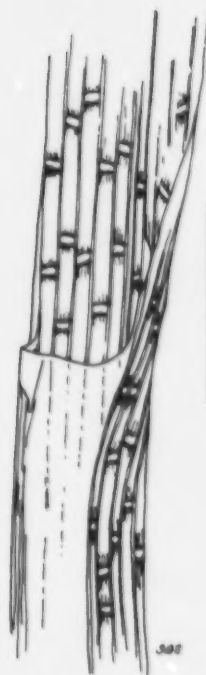


1 Carex rostrata



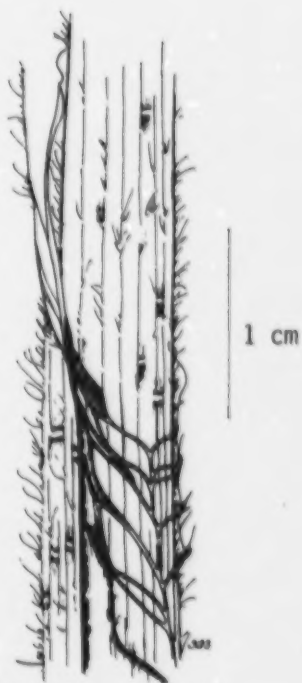
1 mm

1 cm





2 Carex atherodes



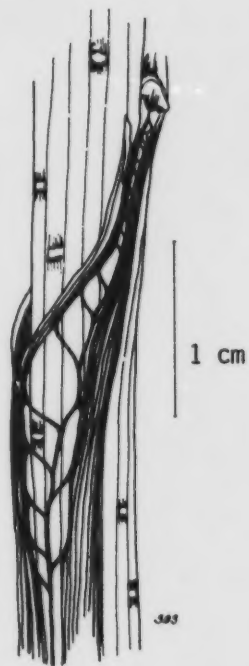


3 Carex aquatilis



4 Carex sitchensis





5 Carex exsiccata





Carex lasiocarpa

plant - tall (up to 120 cm), slender
with scaly rhizome

leaves - rolled, narrow, less than
2 mm wide

spikes - terminal spike male; female
spikes 1 or 2, sessile; lower
bract rolled, erect

perigynia - densely pubescent, with
erect teeth

comments - widespread in marshes,
edges of streams and lakes,
occasionally occurring in pure
stands. The fine pubescence on
the perigynia distinguishes this
species and *C. lanuginosa* from
other sedges of this size.





Carex lanuginosa

plant - tall (up to 100 cm), slender
with scaly rhizome

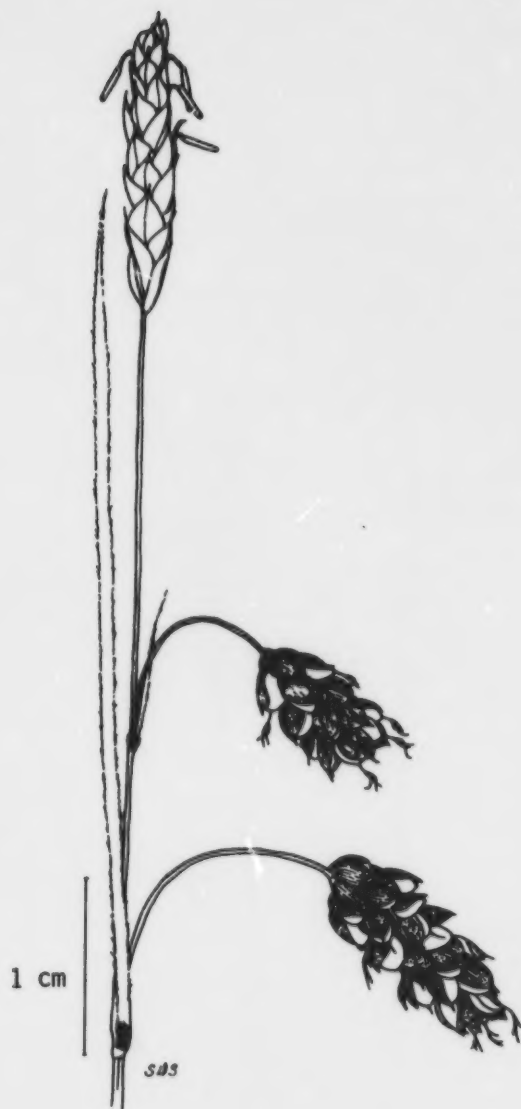
leaves - flat, 2-5 mm wide

spikes - terminal spike male; female
spikes 1 or 2, sessile; lower
bracts leaflike, divergent

perigynia - densely pubescent, with
slightly divergent teeth

comments - this species is similar to
C. lasiocarpa but has wider, flat
leaves, and divergent bract.
While both species may be observed
growing in water they are not
strictly aquatic sedges. *C.*
lanuginosa is widespread, found in
various wetland habitats.





Carex limosa

plant - stems single or few on long slender rhizomes, roots covered with a yellowish felt

spikes - terminal male spike long, 15-27 mm; female spikes nodding; broad obtuse scales, equalling length of perigynia

comments - similar in appearance and habitat to *C. paupercula*, but easily distinguished by the longer male spikes, and the differently shaped scales on the female spikes.





Carex paupercula

plant - loosely clustered in small tufts on a rhizome; roots covered with a yellowish felt

spikes - terminal male spike short, 4-12 mm; female spike nodding with long narrow scales tapering to a long point, longer than the perigynia

comments - widespread, in peaty wetlands, occasionally growing in large clumps. Often found with *C. limosa*, *C. chordorrhiza* or *C. tenuiflora*.



Carex simulata

plant - tall (40-60 cm), slender, from brown rhizome; leaves elongate; ventral strip of leaf-sheath translucent and nerveless

spikes - closely aggregated into a head 2-4 cm long; plant dioecious

perigynia - small, 2.5 mm long, hidden by scales; very short beak

comments - locally abundant in wet calcareous fens, often in dense pure stands or mixed with *C. diandra*. *C. simulata* can be confused with *C. praegracilis*, *C. sartwellii*, *C. diandra* and *C. prairea*. The presence of a brown rhizome plus the small ovate perigynia help to distinguish this species.



Carex praegracilis

plant - stems from stout black creeping rhizome, old sheaths dark like the rhizome
 spikes - sessile, closely aggregated; male flowers above female or plant dioecious
 perigynia - 2.6-4.5 mm long, with prominent beak 0.6-1.3 mm

comments - this is one of the most common sedges in the Cariboo Region. It is found on moist alkaline soil in meadows, and often moves into the adjoining grassland along with *Juncus balticus*. It never extends into the forest.

C. praegracilis is an extremely variable sedge. A large part of our population is dioecious. This is particularly evident in the spring when the yellow flowering male heads contrast with the white of the female spikes. The thick black scaly rhizome and the shape of the mature perigynia are useful features in distinguishing this species. *C. douglasii* and *C. siccata* have finer, light brown rhizomes.



Carex sartwellii

plant - tall, 50-80 cm high, arising singly or in small clumps from a dark brown rhizome; leaves widely separated; ventral strip of leaf-sheath with green nerves

spikes - numerous (10-20) aggregated into a stout head 3-6 cm long; spikes with male flowers above female

perigynia - hidden by scales, 3-4 mm long, nerved on both surfaces

comments - widespread; found in marshes and fens, often in calcareous soils. The sheath and head have features which distinguish this plant from similar species, *C. praegracilis* and *C. simulata*.

Carex parryana

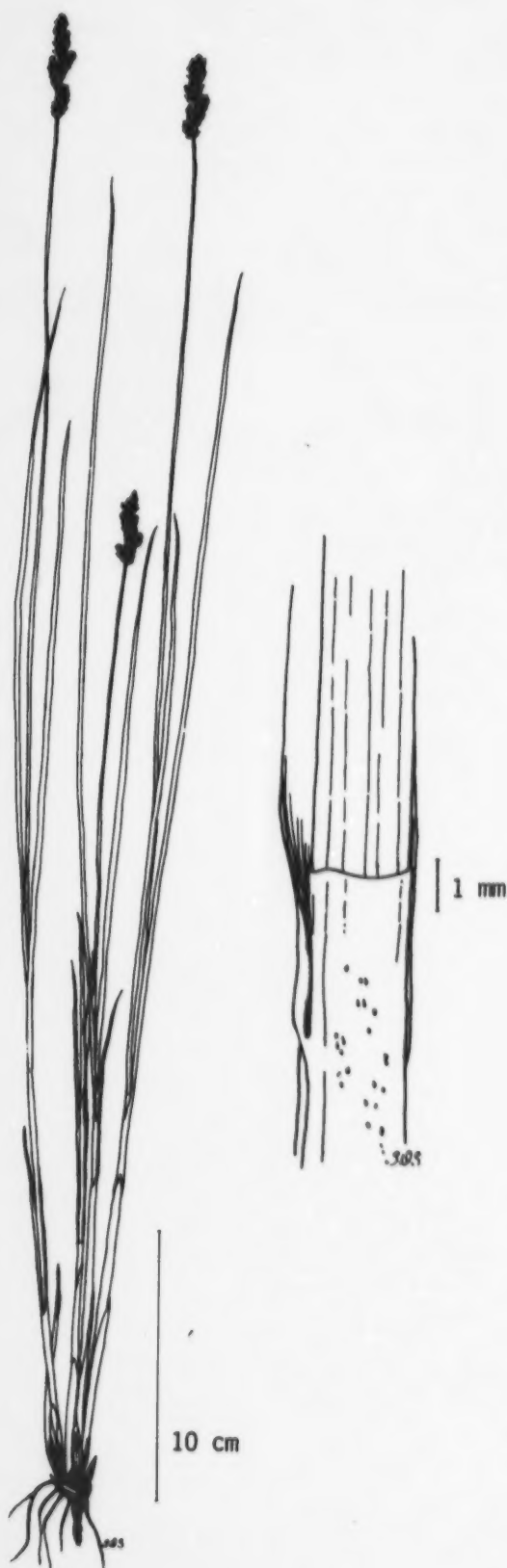
plant - stem often solitary, more or less leafless; rhizomatous

leaves - crowded near the base, flat and firm

spikes - 3-5 linear-cylindric spikes with the terminal one male or male at the bottom; the others female; all sessile and overlapping

comments - a distinctive sedge with a stiff erect stem much longer than the leaves. Infrequent, found in alkaline meadows, around lakes and in shrub-carrs.





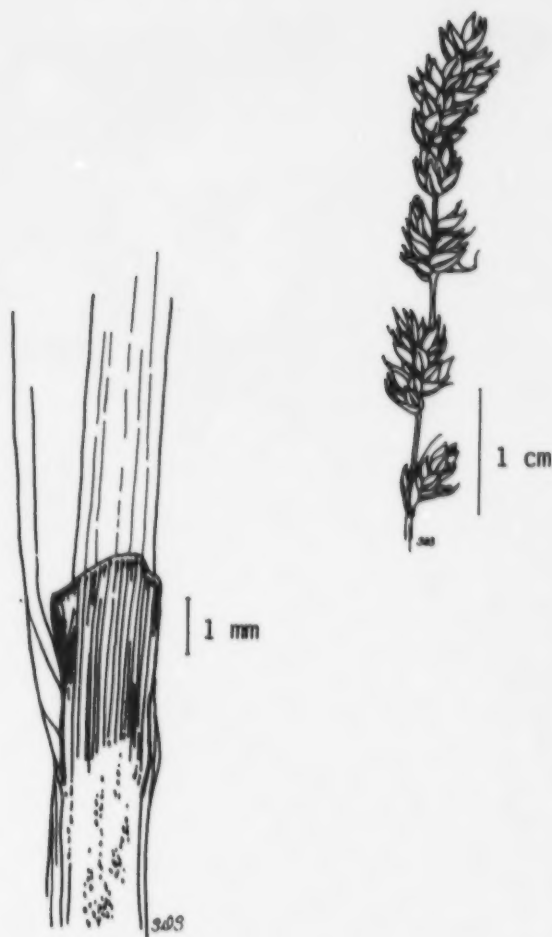
Carex diandra

plant - shoots clustered, forming a loose tussock, 30-70 cm high; stems erect; leaves narrow, less than 3 mm wide

sheaths - red-dotted ventrally, not copper-tinged at the mouth

spikes - several, closely aggregated into a dense dark-brown head; male flowers at the top of each spike; perigynia dark, shiny, and longer than scales

comments - a common sedge of fens and marshes. *C. diandra* can be easily confused with two similar species, *C. prairea* and *C. cusickii*, with which it often occurs. The characters of the sheath are useful in separating these three species.



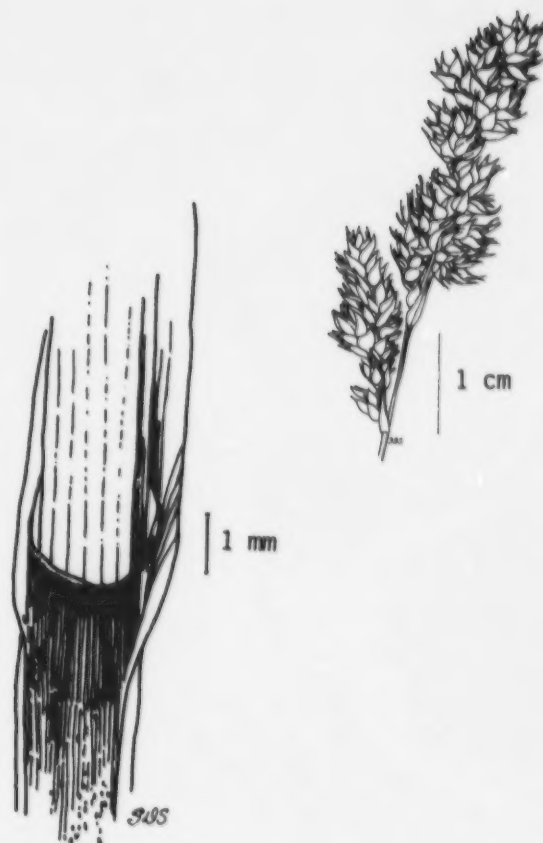
Carex prairea

plant - shoots clustered, forming a loose tussock 30-80 cm high; stems arching outwards; leaves narrow, less than 3 mm

sheaths - copper-tinged at the mouth, convex and conspicuously prolonged beyond base of blade

spikes - a compact head interrupted below; male flowers at the top of each spike; perigynia nearly concealed by the scales

comments - frequently found in wet peaty fens. The distinctive sheath separates this sedge from *C. diandra* and *C. cusickii*.



Carex cusickii

plant - in large clumps; 60-120 cm high; leaves wide 2.5-6 mm

sheath - red-dotted ventrally, copper-tinged at the mouth, concave and only slightly prolonged beyond the base of blade

spikes - a compact head interrupted below; male flowers at the top of each spike; perigynia nearly concealed by the scales

comments - occasionally found in wet peaty fens. The wider leaves plus the tendency to form large isolated clumps help to separate this sedge from *C. diandra* and *C. prairea*. *C. stipata* has coarse leaves 5-11 mm wide and cross-corrugated sheaths.



Carex microptera

plant - tufted; stems numerous; leaves flat 2-4 mm wide

spikes - several crowded into a blunt cone-shaped head; male flowers at base of each spike

perigynia - ovate, wing-margined, tapering to a well defined beak

comments - a widespread sedge found along creek edges, in shrub-carrs, meadows and fens; also in the subalpine. *C. microptera* can be confused with *C. pachystachya*, which is found in more humid areas, and with *C. macloviana* which is more common in the subalpine. See Appendix 1 for a key that separates these three species. *C. crawfordii* has very narrow perigynia (0.8-1.0 mm wide).



Carex athrostachya

plant - tufted, stems numerous; leaves flat 1-3 mm wide

spikes - several crowded into an ovoid head 1-2 cm long; male flowers at base of each spike; lower spike bract leaflike, elongate

perigynia - narrow, thin-edge, tapering to a long beak

comments - a widespread sedge of meadows. A less common species, *C. sychnocephala* will key out here but can be distinguished by the several long foliaceous bracts. *C. athrostachya* and *C. sychnocephala* both appear after disturbance in a wetland. Uncommon species *C. bebbii* and *C. tenera* lack the elongate bract, and have wider perigynia which taper to an ill-defined beak.



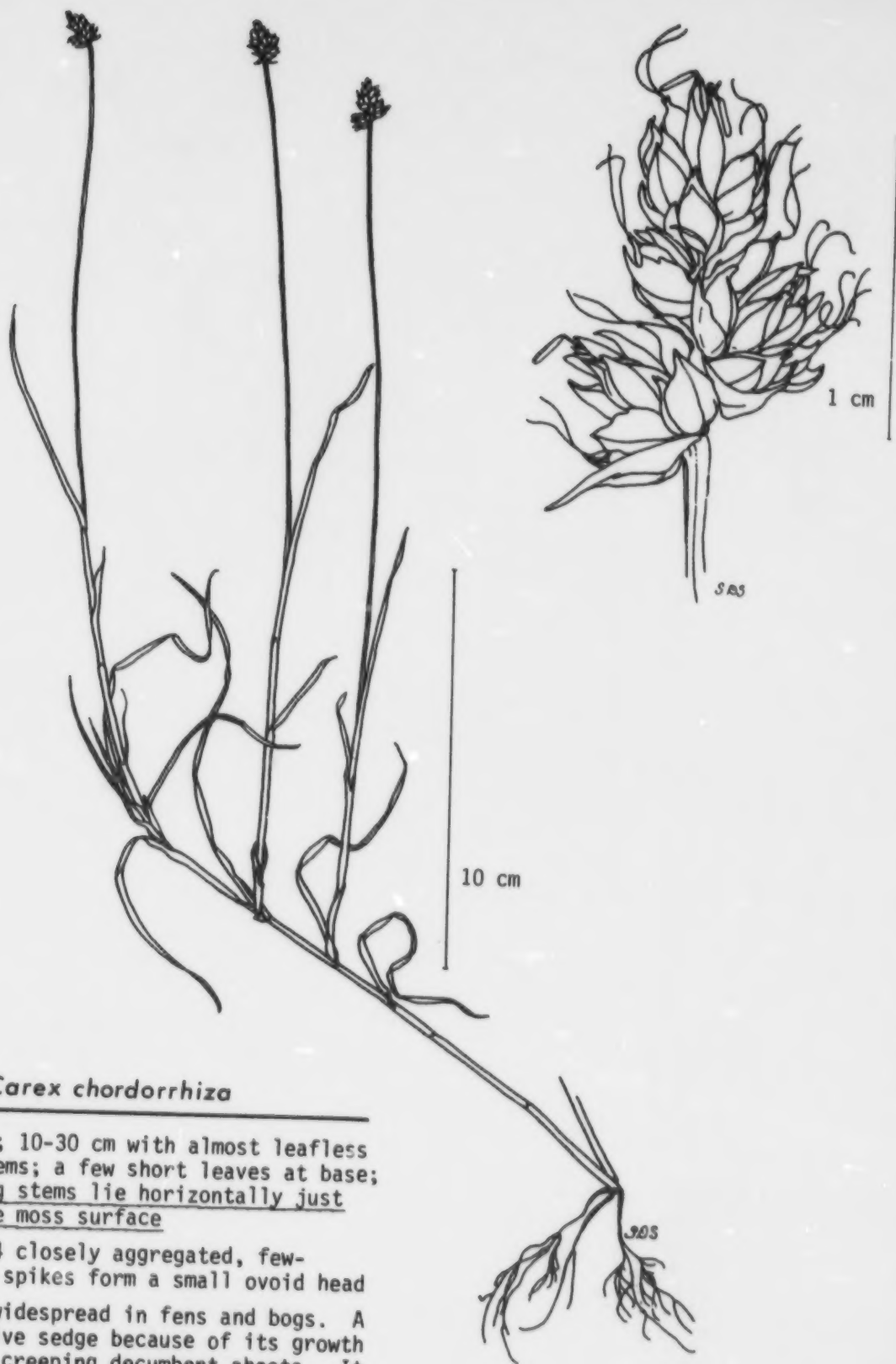
Carex canescens

plant - densely tufted, often forming large clumps; stems erect 10-50 cm high

spikes - 5-6 small spikes, the lower ones separated; male flowers at base of each spike

perigynia - 15-30 per spike, ascending, minutely rough-textured

comments - a common sedge of fens and marshes, widely distributed but seldom found in pure stands. *C. canescens* can be confused with *C. brunnescens*. The larger number of flowers per spike plus the open habitat help to distinguish *C. canescens*. Uncommon species *C. arcta* and *C. heleonastes* may key out here. Both have a more congested inflorescence than *C. canescens*. *C. heleonastes* has only 3-4 spikes per stem, while *C. arcta* has more than 10.



Carex chordorrhiza

plant - low; 10-30 cm with almost leafless erect stems; a few short leaves at base; branching stems lie horizontally just under the moss surface

spikes - 2-4 closely aggregated, few-flowered spikes form a small ovoid head

comments - widespread in fens and bogs. A distinctive sedge because of its growth habit of creeping decumbent shoots. It is often found with *C. limosa* and *C. paupercula*.



1 cm



Carex tenuiflora

plant - stems filiform, arching over, 20-30 cm long; leaves 1 mm wide equalling length of stem

spikes - 3 closely bunched at the tip of the stem; male flowers at the base of each spike

perigynia - ascending elliptic in outline; beakless, pale green with russet nerves

comments - fairly common in fens and bogs, and occasionally in boggy forest. This sedge can be easily recognized by its 3 spikes at the tip.

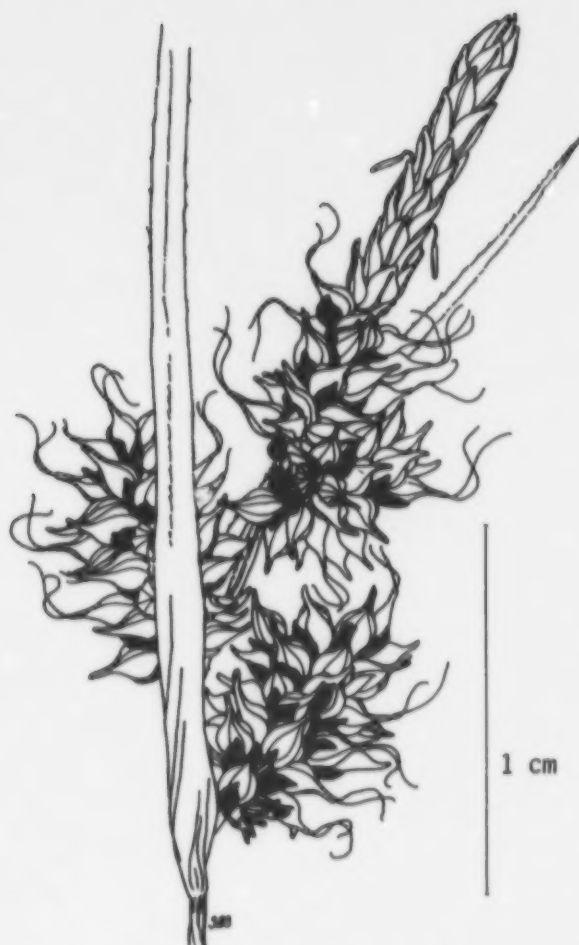


Carex aurea

plant - stems slender, arising singly or in small clumps from creeping rhizome
 spikes - terminal male spike erect; lateral spikes female sometimes with elongate peduncles; elongate leaflike bract

perigynia - spongy, beakless, prominently ribbed and turning gold when mature,
scales widely spreading

comments - a distinctive and rather common sedge of meadows, fens and shrub-carrs.
C. garberi is a closely related species which appears to be similar in every respect except for the perigynia remaining white at maturity.



Carex viridula

plant - small clumps; leaves equalling or longer than stems

spikes - terminal spike male; 2 to 4 female spikes with long foliaceous bracts

perigynia - yellowish-green, with prominent nerves; spreading or reflexed

comments - infrequent; fens and meadows, often in calcareous soil. Not likely to be confused with any other sedge.



Carex interior

plant - tufted; leaves slender, shorter than the wiry, erect stems

spikes - 2 to 5, small and few-flowered; terminal spike with male base

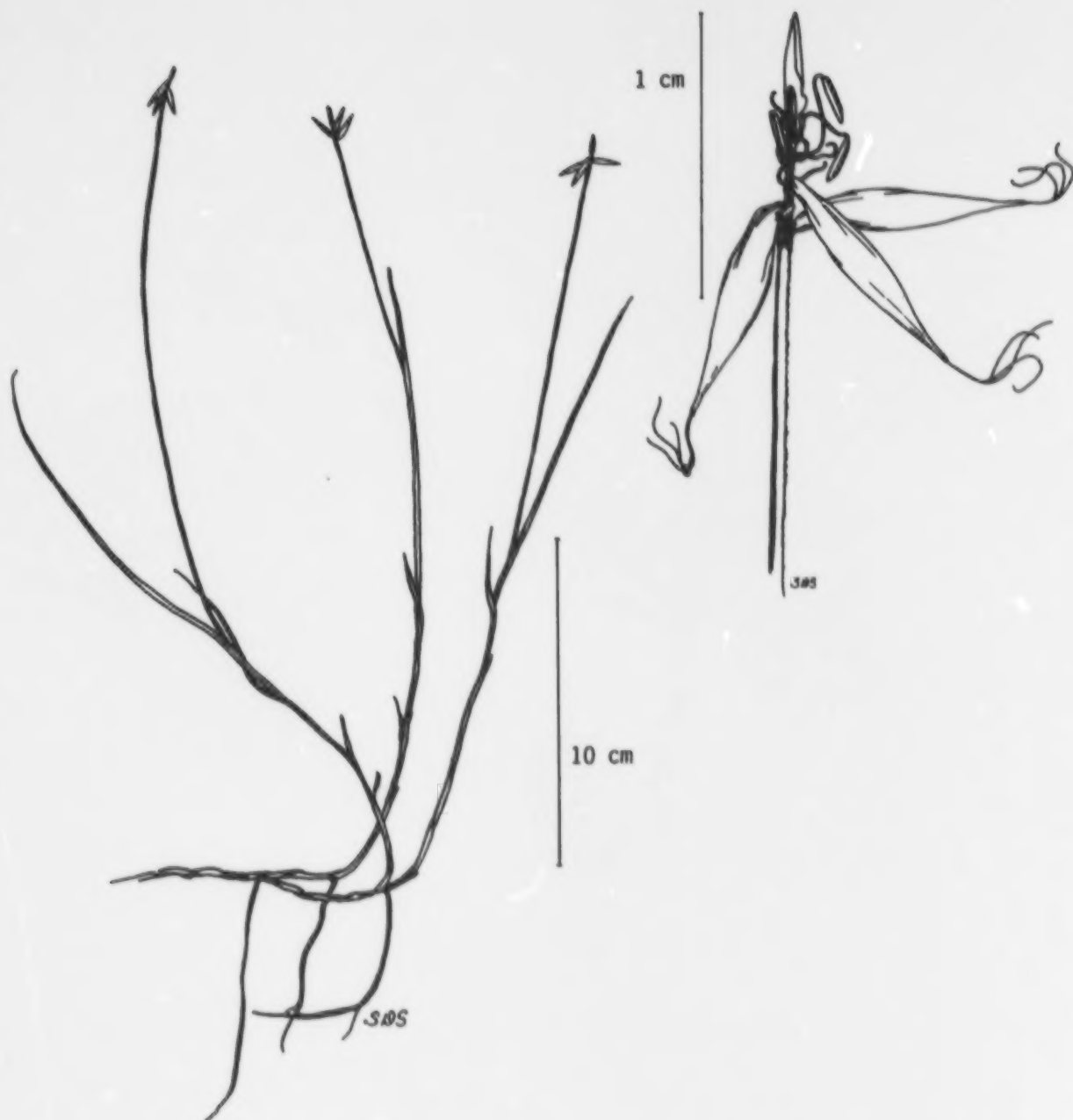
perigynia - widely spreading at maturity, prominently beaked

comments - widespread in bogs and fens. The spreading perigynia give the inflorescence a distinctive star-like appearance. A similar species, *C. angustior*, has a beak more than half the length of the perigynium. *C. interior* has a beak less than one-third the length of the perigynium.



Carex buxbaumii

plant - few, erect, slender stems 25-100 cm tall; slender creeping rhizomes
 spikes - 3 to 5; terminal spike always with short male part at base; lowermost
 spike remote and subtended by a leafy bract about as long as the inflorescence
 perigynia - pale green; scales awned, purplish black with pale midrib
 comments - infrequent; shrub-carrs and fens; a well-marked and distinctive sedge



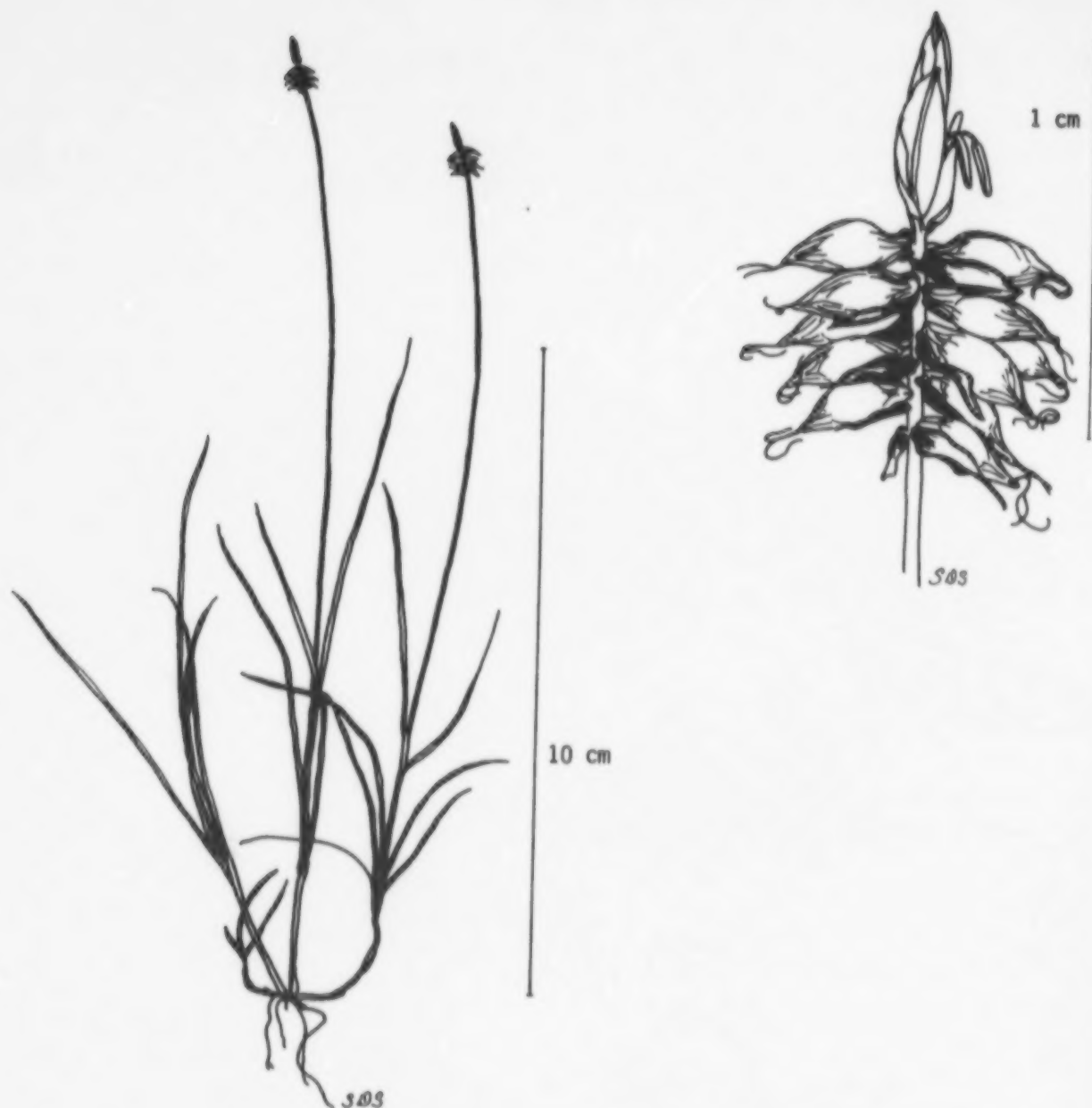
Carex pauciflora

plant - stems up to 40 cm tall, arising singly or few together from very slender rhizomes

spike - solitary, bractless, with a few male flowers at the top

perigynia - few, 6-8 mm long, soon becoming reflexed; both scales and perigynia deciduous at maturity

comments - infrequent; bogs and fens. Closely resembles *C. microglochin*, a small filiform species with shorter perigynia 3-5 mm, from which a stiff, bristle-like rachilla projects.



Carex dioica ssp. *gynocrates*

plant - stems 5-20 cm tall, arising singly from long, very slender rhizomes;
leaves narrow and stiff

spike - solitary, with male flowers at the top or spikes dioecious

perigynia - plump, brown and somewhat shiny, becoming widely spreading at maturity

comments - widespread in bogs, fens and moss-covered openings in the forest. This small sedge is quite distinctive.

Subalpine and Alpine Sedges



Section 5

SUBALPINE and ALPINE SEDGES

Subalpine and Alpine:

Open and forested areas above 1,250 metres east of highway 97 and above 1,500 metres west of highway 97 comprising the Engelmann Spruce - Subalpine Fir (ESSF) and Alpine Tundra (AT) biogeoclimatic zones.

Several of the following species have been previously listed in other sections; they also occur in their respective habitats within the subalpine. Those species that occur only within the subalpine or alpine areas are marked with an asterisk (*).

Common Species:

Carex aenea Fern.
 **C. albonigra* Mack.
C. aquatilis Wahl.
C. brunescens (Pers.) Poir.
C. canescens L.
C. capillaris L.
C. capitata L.
C. concinnoidea Mack.
C. dioica L. ssp. *gynocrates* (Wormsk.) Hult.
C. disperma Dewey
C. interior Bailey
C. lenticularis Michx.
C. leptalea Wahl.
C. limosa L.
C. macloviana D'Urv.
C. mertensii Prescott
 **C. nardina* Fries
 **C. nigricans* Meyer
C. norvegica Retz. (= *C. media* R. Br.)
C. paupercula Michx.
 **C. phaeocephala* Piper
 **C. pyrenaea* Wahl.
C. rossi Boott
C. rostrata Stokes
C. saxatilis L. (= *C. physocarpa* Presl)
 **C. scirpoidea* Michx.
C. sitchensis Prescott
 **C. spectabilis* Dewey
C. tenuiflora Wahl.

Less Common Species:

**Carex atrosquama* Mack.
C. aurea Nutt.
 **C. bipartita* Allioni
 (= *C. lachenalii* Schk.)
 **C. breweri* Boott
C. deflexa Horn.
C. flava L.
 **C. hoodii* Boott
 **C. illota* Bailey
C. microptera Mack.
C. obtusata Lilj.
 **C. praeceptorum* Mack.
 **C. proposita* Mack.

SUBALPINE AND ALPINE

Key:

- 1a. spike solitary
 - 2a. perigynia pubescent*C. scirpoidea* p. 76
 - 2b. perigynia glabrous
 - 3a. plant rhizomatous; leaves various
 - 4a. leaves and rhizome more than 1.5 mm wide; perigynia becoming reflexed*C. nigricans* p. 78
 - 4b. leaves and rhizome less than 1 mm wide
 - 5a. perigynia becoming spreading or reflexed; beak distinct*C. dioica* p. 65
 - 5b. perigynia remaining appressed; apex rounded without beak*C. leptalea* p. 30
 - 3b. plant tufted; leaves narrow .5-1.5 mm wide
 - 6a. perigynia becoming spreading or reflexed; scales deciduous*C. pyrenaica* p. 81
 - 6b. perigynia remaining appressed; scales persistent
 - 7a. plants 10-35 cm tall; perigynia broadly ovate*C. capitata* p. 79
 - 7b. plants short, 2-15 cm; perigynia elliptic*C. nardina* p. 81
- 1b. spike more than one
 - 8a. perigynia pubescent
 - 9a. spikes all borne close together toward the end of stem, none basal*C. conocephala* p. 21
 - 9b. some spikes arising from base of stem, widely separated from terminal spikes*C. rosea* p. 18
 - 8b. perigynia glabrous
 - 10a. spikes sessile or with very short, stiff peduncles
 - 11a. spikes congested into a head-like inflorescence
 - 12a. spikes cylindrical; male flowers at base of terminal spike only; scales black
 - 13a. perigynia dark like the scales; leaves short and wide, 2-7 mm.*C. albonigra* p. 77
 - 13b. perigynia green when young, bronze when ripe; leaves narrow, 1-3 mm.*C. norvegica* p. 27
 - 12b. spikes not cylindrical; spikes all alike; scales brown or silver
 - 14a. perigynia flattened, beaked; scales brown
 - 15a. leaves narrow and firm, less than 2 mm; perigynia slender*C. phaeocephala* p. 80
 - 15b. leaves wider, 2-4 mm; perigynia broad*C. macloviana* p. 56
 - 14b. perigynia inflated, beakless; scales silver*C. tenuiflora* p. 60
 - 11b. spikes separated
 - 16a. spikes very small, less than 5 mm long; 1-3 perigynia per spike*C. disperma* p. 29

- 16b. spikes larger than 5 mm long; more than 3 perigynia per spike
- 17a. perigynia flattened; large flexuous head
.....*C. aenea* p. 33
- 17b. perigynia not flattened
- 18a. perigynia widely spreading at maturity
.....*C. interior* p. 62
- 18b. perigynia remaining appressed
- 19a. spikes small, few flowered (5-10), perigynia beaked
.....*C. brunneocens* p. 31
- 19b. spikes larger, more numerous flowered (15-30), perigynia beakless.....*C. canescens* p. 58
- 10b. spikes not sessile; elongate and cylindrical
- 20a. terminal spike with male flowers at base only; 6-10 drooping spikes.....*C. mertensii* p. 73
- 20b. terminal spike completely male
- 21a. spikes small, less than 3 mm wide, .5-15 mm long, nodding on filiform peduncles.....*C. capillaris* p. 26
- 21b. spikes larger
- 22a. lower bract shorter than inflorescence
- 23a. plant tufted on short scaly rhizome; perigynia flattened, reddish blotched.....*C. spectabilis* p. 72
- 23b. stems arising singly from long creeping rhizome; perigynia somewhat compressed, greenish
.....*C. limosa* p. 48
- 22b. lower bract longer than inflorescence
- 24a. plants tufted; spikes slender, less than 5 mm thick, all erect and overlapping one another
.....*C. lenticularis* p. 75
- 24b. plants rhizomatous; spikes more or less nodding
- 25a. terminal male spike short, less than 12 mm long; scales tapering to a long narrow point.....*C. paupercola* p. 49
- 25b. terminal male spike longer than 12 mm
- 26a. perigynia flattened, small, less than 3 mm
- 27a. lower spike nodding on peduncle greater than 3 cm.....*C. atchenae* p. 44
- 27b. lower spike sessile or with short peduncle.....*C. aquatica* p. 44
- 26b. perigynia inflated, longer than 3 mm
- 28a. leaves wide 4-12 mm; spikes reddish-brown.....*C. rostrata* p. 42
- 28b. leaves narrow 2-4 mm; spikes dark
.....*C. saxatilis* p. 74



Carex spectabilis

plant - 20-90 cm tall, tufted; leaves on lower half of stem

spikes - terminal spike male; 2-4 separated female spikes, more or less nodding

perigynia - oblong-ovate, flattened, reddish-blotched; scales dark, with conspicuous, stout, pale midrib, which may be extended as an awn tip

comments - widespread in the subalpine parkland, occasionally occurring above timberline. Grazed by livestock.



Carex mertensii

plant - 40-120 cm tall, stout,
clustered from short rhizome;
leaves large, elongate, from lower
half of stem

spikes - 6-10, drooping on slender
peduncles, near together; male
flowers at base of most spikes

perigynia - broadly ovate,
flattened; scale acute, dark with
lighter midrib, much smaller than
perigynia

comments - common in the subalpine
parkland, occurring down to 700 m
in the wet forest. Grazed by
livestock.



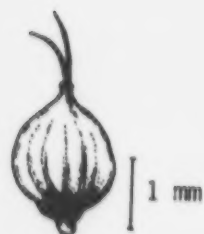
Carex saxatilis

plant - 20-80 cm tall, slender, stems
arising singly or few together
from creeping rhizomes

spikes - 2-4; upper spike male;
lower spikes female, thick and
dark, widely separated, more or
less nodding

perigynia - elliptic-ovate,
 contracted to a short beak;
stigmas two; scales dark,
smaller than perigynia

comments - occasional in fens in the
 subalpine, and on margins of
 mountain streams and lakes.



Carex lenticularis

plant - 20-80 cm tall, densely tufted

spikes - 3-6 elongate erect spikes;
upper spike male, lower spikes
female; or upper spike partly female

perigynia - ovate, ribbed; perigynia
 green with dark scales

comments - occasional in the subalpine
 parklands and in openings in the
 wet forest at lower elevations.
 The terminal male spike plus the
 erect female spikes help to
 distinguish this sedge.



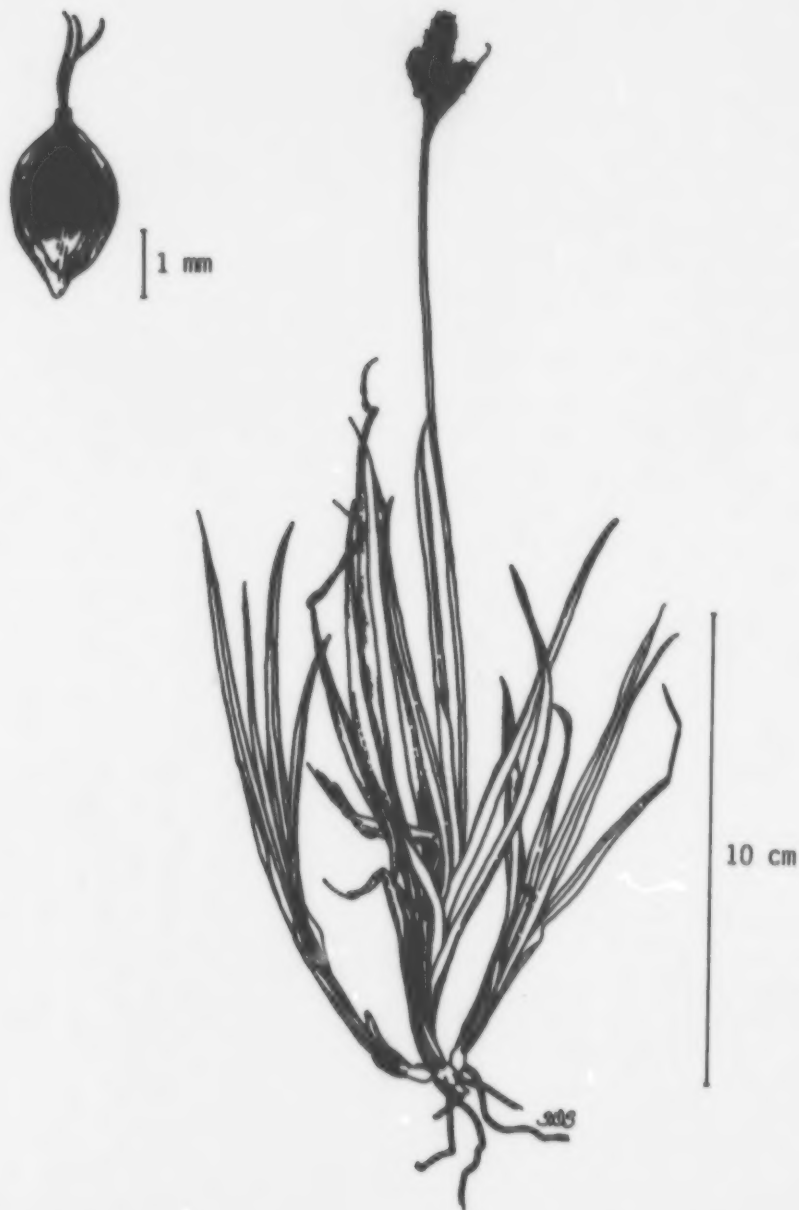
Carex scirpoidea

plant - 10-40 cm high, stems stiff, one or few together from short rhizome

spike - solitary, erect; male and female spikes on separate plants

perigynia - short, hairy; stigmas 3

comments - found in the alpine and open sites in the upper subalpine. The single unisexual spike makes this a distinctive sedge not easily confused with any other.



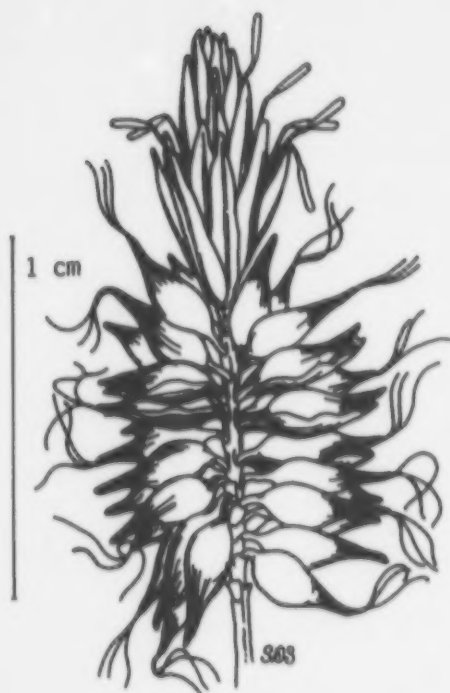
Carex albonigra

plant - 10-30 cm high, loosely tufted; leaves flat, firm and rather short

spike - 2-4 black spikes closely aggregated into a headlike inflorescence; terminal spike with male flowers at base

perigynia - flattened, blackish-purple; scales dark with pale margins, about equalling perigynia

comments - common on open, dry, rocky slopes in the alpine and upper subalpine. The erect black spikes distinguish this sedge from others found at high elevations.



Carex nigricans

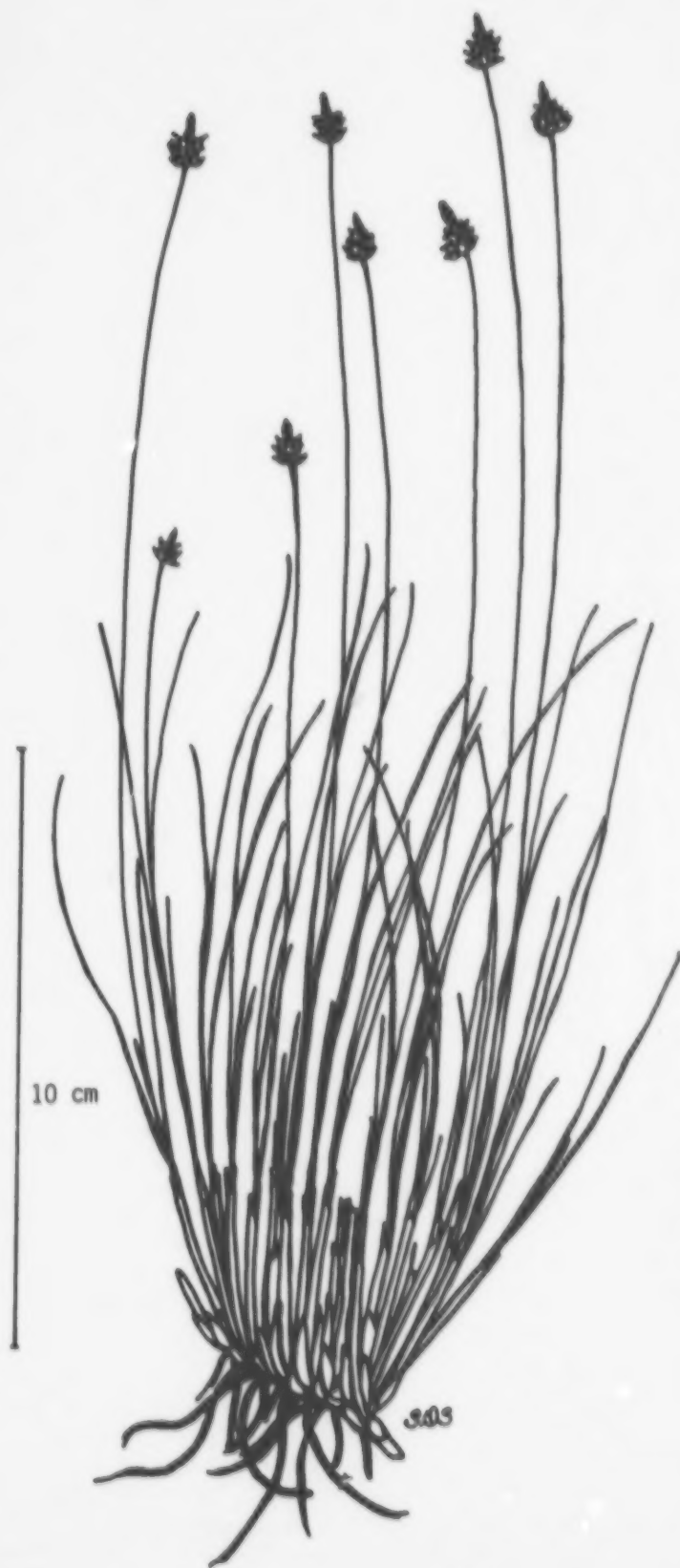
plant - 4-30 cm high, rhizomatous;
leaves stiff

spike - solitary, male flowers at
top, female below

perigynia - spreading - reflexed
at maturity, early deciduous

comments - a common sedge of
snowbed areas in alpine
meadows and subalpine
parkland. Can be confused
with *C. pyrenaica*, which
lacks a rhizome and has
less widely spreading
perigynia.





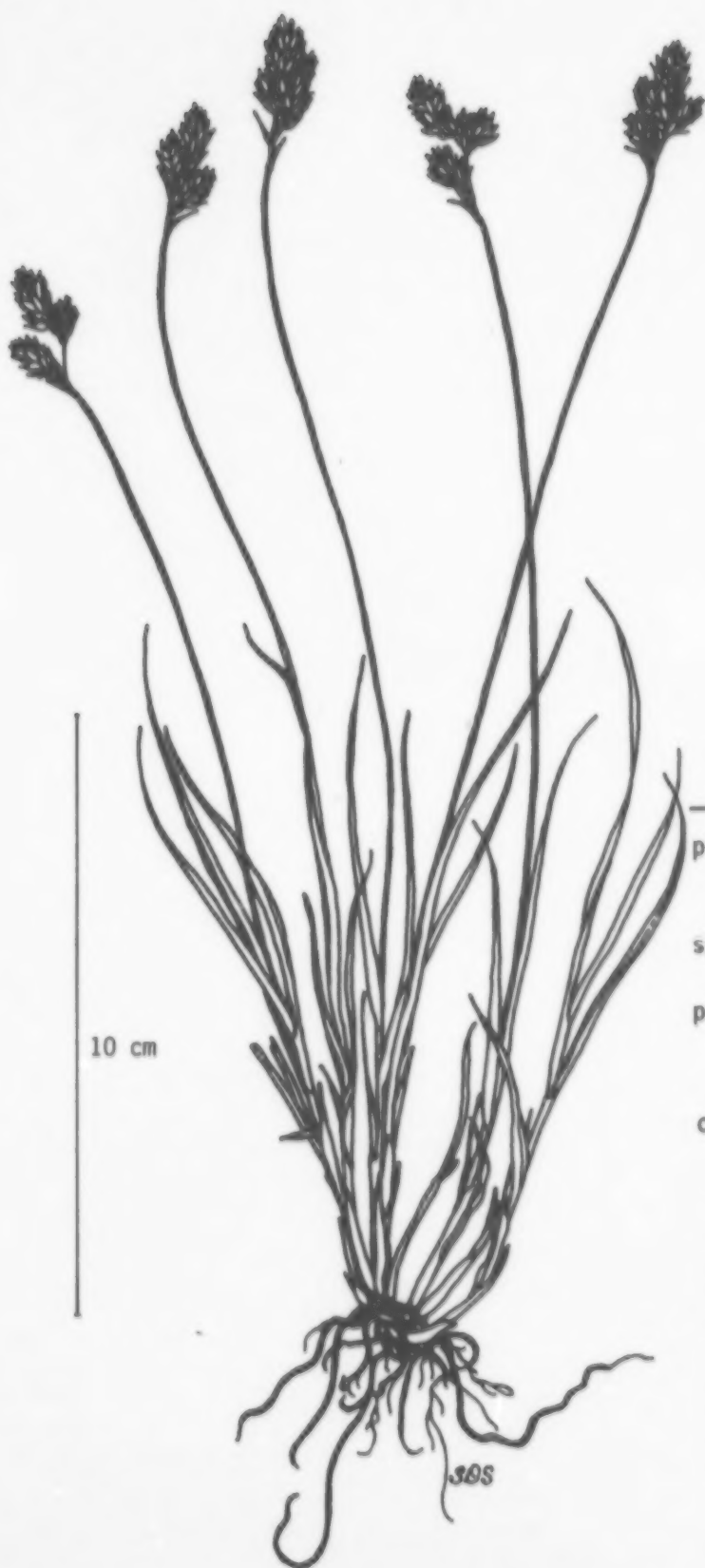
Carex capitata

plant - 10-35 cm high, tufted on a short rhizome; stems slender; leaves less than 1 mm wide

spike - solitary, male flowers at top, female below

perigynia - ovate, flat; scales broadly ovate

comments - occurs on dry exposed sites in the alpine, open meadows and shrub-carrs in the subalpine, and also in shrub-carrs at lower elevations in the western Chilcotin. The flat ovate perigynia and the conspicuous male flowers at the top of the spike help to distinguish this sedge from others with a solitary spike. *C. breweri*, an uncommon alpine species, is somewhat similar except for having a larger perigynium (greater than 4 mm long).



Carex phaeocephala

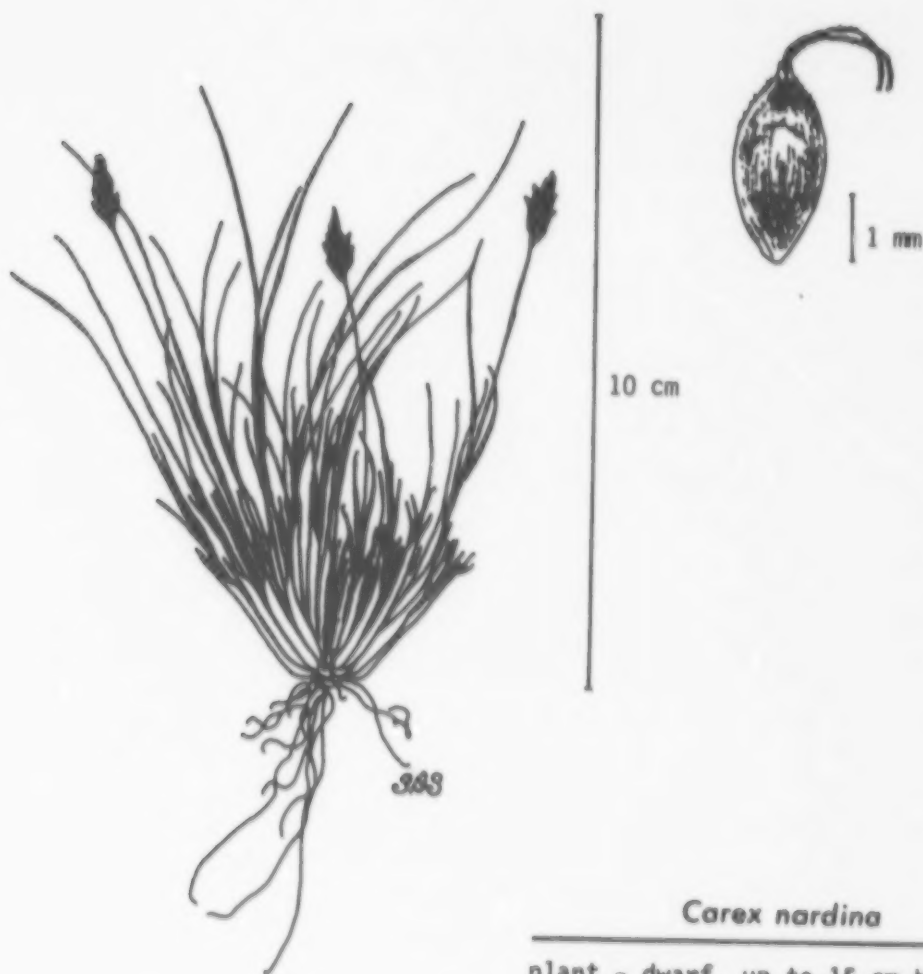
plant - 10-30 cm high, densely tufted; leaves stiff, clustered near the base

spikes - 3-7, straw-coloured, aggregated into a stiff head

perigynia - oblong-ovate, wing-margined, flattened; scales reddish brown, covering perigynia

comments - a fairly common alpine species; often found on open scree slopes. A less common species, *C. proposita* is very similar in appearance but has a more flexuous head and wider perigynia (2.5 - 3 mm wide).

C. bipartita, *C. praeceptorum*, and *C. illota*, would all key out here, but differ in having smaller (less than 3.4 mm), inflated perigynia. *C. bipartita* has fewer spikes (2-4) than *C. praeceptorum* (4-6); *C. illota* has reflexed perigynia.



Carex nardina

plant - dwarf, up to 15 cm high,
tufted; leaves fine, stiff, and
wirelike; old leaf bases
conspicuous

spike - solitary, inconspicuous
male flowers at top, female
flowers below

perigynia - elliptic, tapering at
both ends; well developed
rachilla more than half as long
as achene; scales straw-coloured,
wider than perigynia

comments - usually found only on
dry rocky ridges and slopes
above timberline. *C. pyrenaica*,
another dwarf tufted sedge, is
very similar in appearance.
The absence of a rachilla plus
narrower perigynia help to
distinguish *C. pyrenaica*.



Carex pyrenaica

Appendix 1

Key to the species of the *Carex macloviana* aggregate *

Distance from top of achene to perigynium tip one half or less the total length of the perigynium; perigynia reddish to dark coppery-brown.

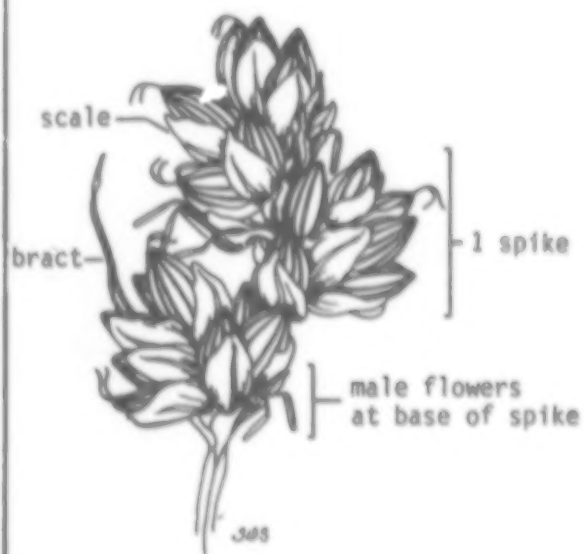
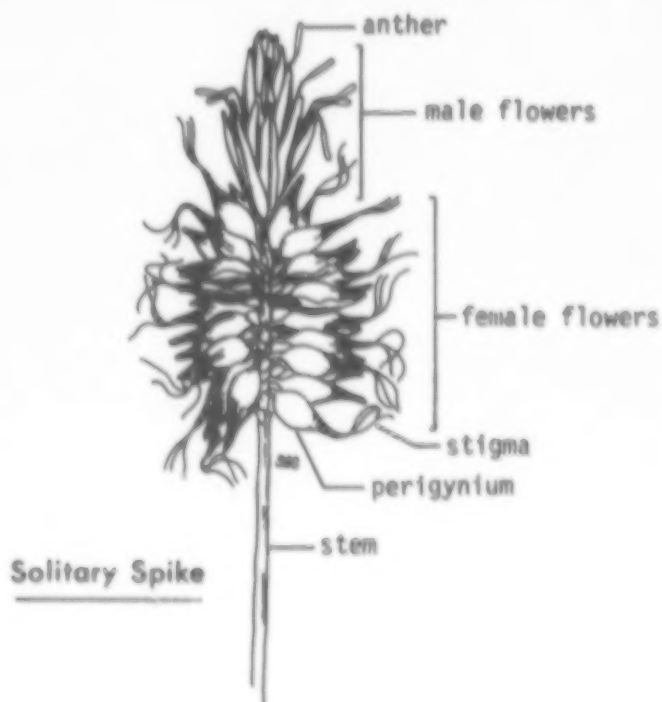
Scale margins, perigynia tips, and dorsal suture margins noticeably white hyaline; perigynia wings darkened, contrasting with the body of the perigynia.....*C. macloviana*

Scale margins and perigynia tips not differentiated or narrow hyaline margined; perigynia wings concolorous with the body of the perigynia, wings at most dark edged.....*C. pachystachya*

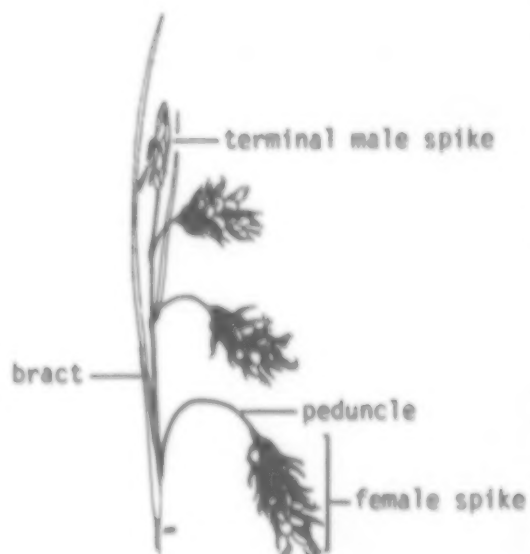
Distance from top of achene to perigynium tip one half or more the total length of the perigynium; perigynia stramineous or light green to dark brown.....*C. microptera*

* Whitkus, R. 1981. A taxonomic Investigation of the *Carex macloviana* D'Urv. aggregate in Western Canada and Alaska. M.Sc. thesis, University of Alberta.

INFLORESCENCE

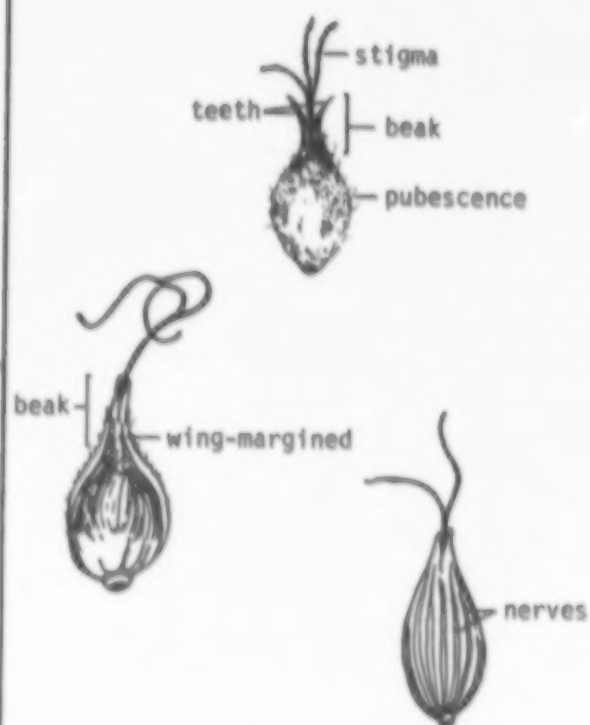


Multiple Spikes (sessile)

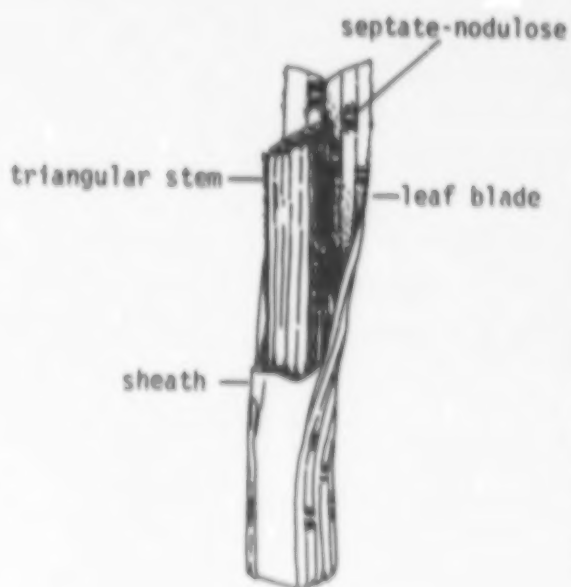


Multiple Spikes (nodding)

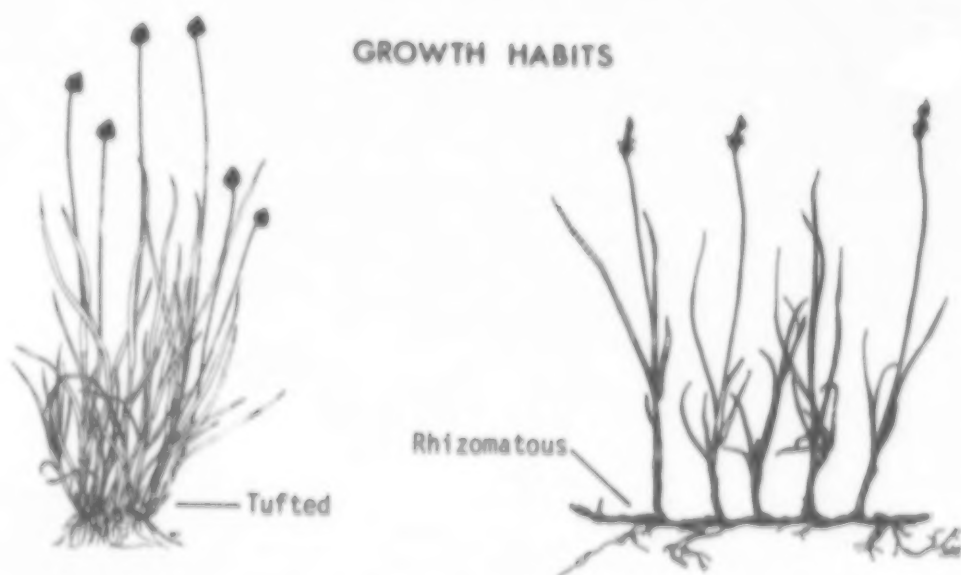
PERIGYNIA



LEAF SHEATH



GROWTH HABITS



GLOSSARY

- Achene: A small, dry and hard, one-celled, one-seeded, indehiscent fruit.
- Anther: The part of the stamen which bears the pollen.
- Appressed: Pressed flat against another organ.
- Awn: Slender, generally terminal bristle.
- Beak: A prolonged, more or less slender tip.
- Bidentate: Having two teeth.
- Blade: The expanded part of leaf.
- Bog¹: A wetland comprised of in-site accumulations of poorly to moderately decomposed Sphagnum-derived peats.
- Bract: A specialized leaf from the axil of which a spike arises.
- Capsule: A dry, dehiscent fruit composed of more than 1 carpel.
- Concolorous: Of uniform color.
- Deciduous: Falling after completion of the normal function.
- Decumbent: With a prostrate or curved base and an erect or ascending tip.
- Dehiscent: Opening at maturity.
- Dioecious: Producing male and female flowers on separate plants.
- Elliptic: With approximately the shape of a geometrical ellipse.
- Fen¹: A wetland comprised of in-situ accumulations of well to poorly decomposed non-Sphagnum peats.
- Filamentose: Composed of, or breaking up into, threads.
- Filament: The stalk of a stamen.
- Filiform: Very slender, threadlike.
- Flexuous: Zigzag.
- Foliaceous: Leafy in texture.
- Glabrous: Smooth, without hairs or glands.
- Globose: More or less spherical.
- Hyaline: Thin and transparent or translucent.
- Indehiscent: Remaining closed at maturity.
- Inflorescence: A flower cluster of a plant, or the arrangement of the flowers on the axis.
- Marsh¹: A wetland that is permanently or seasonally inundated and that supports an extensive cover of emergent, non-woody vegetation rooting in mineral-rich substrate.

-
- Meadow¹: An herbaceous wetland developed on mineral materials that are periodically saturated but rarely inundated.
- Nerve: A prominent longitudinal vein of a leaf or other organ.
- Nodose: Knobby.
- Nodulose: Diminutive of nodose.
- Obtuse: Blunt or rounded at the end.
- Ovate: Egg shaped in outline.
- Papillate: Covered with short rounded projections.
- Peduncle: The stalk of a spike.
- Perianth: The sepals and petals (or tepals) of a flower, collectively.
- Perigynium: The inflated, saclike organ surrounding the ovary or achene in *Carex*.
- Persistent: Remaining attached after the normal function has been completed.
- Pubescent: Bearing hairs of any sort.
- Rachilla: A small axis of an inflorescence.
- Reflexed: Bent backward.
- Rhizomatous: Bearing rhizomes.
- Rhizome: A creeping underground stem.
- Scabrous: Rough to the touch.
- Scale: Any small, thin or flat structure.
- Septate: Provided with partitions.
- Sessile: Attached directly by the base, without a stalk.
- Sheath: The tubular basal part of a leaf that encloses the stem.
- Shrub-Carr¹: A low shrub dominated wetland developed on mineral materials that are periodically saturated but rarely inundated.
- Spike: A simple inflorescence with the flowers sessile or nearly so on a more or less elongated rachis.
- Stamen: The male organ of a flower, consisting of anther and a filament.
- Staminate Flower: One with 1 or more stamens, but no pistil.
- Stigma: The part of the pistil which is receptive to pollen.
- Stramineous: Straw-colored.
- Tepal: A sepal or petal, or member of an undifferentiated perianth.
- Wing: A thin, flat extension from the side of a perigynium.

¹ Runka and Lewis, 1981

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